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THE DECISION MAKING PROCESSES OF THE MEDICAL PROFESSIONALS AND HOSPITALS IN RECOMMENDING/ADOPTING INFANT FORMULA

by

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ABSTRACT

In recent years, there has been a decline in the number of mothers who breastfeed their babies. One of the reasons for the decline in breastfeeding is that the infant formula companies have been doing much marketing and promotion on their products.

At this same time, there is a trend towards increasing governmental regulations on the marketing and promotional efforts of the infant formula companies. The infant formula companies are being faced with the problem of promoting their products and yet remaining ethical. In reaction, the companies have agreed to concentrate their marketing and promotional efforts on the medical professionals only and refrain from promoting to mothers. But, is it true that the infant formula companies are really influencing people? What is the impact, if any, of the marketing and promotional efforts on the medical professionals, particularly in terms of the influence on the brand recommendation processes (or the hospital's adoption processes)?

This study attempts to answer the above questions in light of the decision making processes of the medical professionals and hospitals in recommending/adopting infant formula. The purpose is to find out the various factors which the medical professionals and hospitals take into consideration during their decision making processes, thereby determining the impact of the marketing and

promotional efforts. Medical professionals are interviewed and flow diagrams showing their decision making processes in recommendation/adoption of infant formula are drawn.

From the findings, it can be seen that brand recommendations are really simple decision making processes. The medical professionals would have gone through detailed information processing processes when they are first considering brands to be used in the hospitals. Recommendation is simply the picking of one or two brand names from the "acceptable" list of brands. In addition, it is found that the general practitioners and the nurses are more susceptible to promotion than the paediatricians. Finally, the conclusion is that marketing and promotional efforts of the infant formula companies do have impact on the medical professionals' and hospital's decision making processes.

In view of the findings, a recommendation is made to the infant formula industry to take on a role as an active advocator of breastfeeding (and thereby becoming ethical). At the same time, the industry can continue promoting to the general practitioners and the nurses but giving detailed chemical compositional breakdowns to the paediatricians. The areas for emphasis will be: availability of the brand in the market, reliability of the manufacturer in terms of quality control, and past usage experiences. In the long run, the companies may develop follow-on (high protein) infant formula to capture larger sales.

Lastly, in anticipation of the trend of increasing regulations and restrictions, it may be to a company's advantage to become the initiator of social responsibility rather than be the follower.

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CHAPTER I

INTRODUCTION

In the past decade, there has been a rapid decline in breastfeeding. A recent article in the South China Morning Post reflected the situation in Hong Kong:

> According to a recent Government health survey, less than five percent of all Hong Kong mothers breastfeed, and paediatricians working in Government hospitals feel the number is significantly lower than that.... What particularly concerns doctors is the fall from 42 percent wholly breastfed babies in 1967 to five percent of the general population now.[1]

There are a number of reasons for the decline in breastfeeding. First of all, urbanization, such as mothers working, has made it difficult for mothers to schedule feeds. Secondly, changes in societal values have led women to thinking that breastfeeding is "backward" while bottlefeeding is thought to be the "modern" way of feeding babies. Thirdly, there is a lack of knowledge about breastfeeding because the medical profession has taken on an ambivalent attitude towards it. Mothers are not prepared to breastfeed because they are not taught to do so. Finally, the aggressive promotional activities of the infant formula manufacturers (and agents) have convinced mothers that infant formula is good enough although breast milk is best for their babies, especially

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[1] "Breastfed: Best-fed," South China Morning Post, 11 February 1980, p. 11.

when the mothers have to go to work. This last issue has been cited by critics as the major cause for the decline in breastfeeding. Nevertheless, a question yet to be answered is: What has resulted because of the decline in breastfeeding?

The result of the decline in breastfeeding is best illustrated by the findings of a survey conducted by Field and Baber between 1967 and 1973.[2] The survey showed that breastfed babies were more advanced in their overall development than the bottlefed ones and the difference could be seen from six months to 2½ years. On a more general basis, the result of the change from breastfeeding to bottle-feeding is seen in the higher morbidity and mortality rates among bottlefed babies. Although it is impossible to count the number of babies that have suffered or died, the relationship between bottlefeeding and infant malnutrition, disease and death has been evidenced by many well known studies. A survey of 15,000 babies in 1948 (still relevant today) have found that there were more gastroenteritis, more respiratory infection and more measles among bottle-fed babies.[3] Jelliffe, a paediatric specialist at the UCLA School of Public Health, has even estimated that there are over 10 million cases a year of malnutrition directly attributable to bottlefeeding.[4]

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[2]C. E. Field and F. M. Baber, Growing Up in Hong Kong (Hong Kong: Hong Kong University Press, 1973).

[3]B. Levin, H. M. Mackay, C. A. Neill, N. G. Oberholzer, and T. P. Whithead, "Weight Gains, Serum Protein Levels, and Health of Breastfed and Artificially-fed Infants," Special Report Series no. 296: Medical Research Council, 1959.

[4]Leah Margulies, "Bottle Babies: Death and Business Get Their Market," Business & Society Review no. 25 (Spring 1978):43-9.

With the recognition of the adverse consequences of bottlefeeding, a series of campaigns, beginning in the early 1970s, have been launched to reverse the dangerous trend towards bottlefeeding. International organizations such as the World Health Organization, the Protein Calorie Advisory Group (PAG), the Food and Agriculture Organization, the International Paediatrics Association, and the INFACT (Infant Formula Action Coalition) have all been involved. The general claim is that infant formula can be a dangerous product in the developing countries where families lack the adequate levels of income, sanitation and education to prepare the product properly. Hence, the objective of these organizations is to push for regulations restricting the advertising and promotion of infant formula, particularly in the developing or less developed countries.

In response to the pressure imposed by the various organizations, the infant formula industry has reacted by forming an international council, the ICIFI (International Council Infant Food Industries). A code of marketing ethics for the industry was established by the council and member firms were urged to conform to this code. In a recent conference in Geneiva (held in October 1979), the governments of 23 countries, the infant formula industry and some other non-governmental organizations have arrived at the following conclusion by concensus:

> There should be no sales promotion, including promotional advertising* to the public of products to be used as breastmilk substitutes or bottlefed supplements and feeding bottles.

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*This includes the use of mass media and other forms of advertising directly to the mother or general

> public, designed to increase sales of breastmilk substitutes, to the detriment of breastfeeding.[5]

It then follows that the medical professionals will in future become major targets of promotion.

Problem Definition

Although it appears that the infant formula companies can in the future still direct their marketing and promotional efforts towards the medical professionals, such approach is not without its problems. From a social responsibility point of view, the infant formula companies will continue to be accused of influencing the decision making of the medical professionals as regards infant formula, particularly in the context of making brand recommendations to mothers or to hospitals. Such accusation may have been raised because some infant formula companies are still trying to go around the restrictions and are really acting in contrary to what have been agreed upon. Hence, the infant formula industry is faced with an imminent problem, that of promoting their products and yet be socially responsible.

Before the infant formula industry can tackle the problem, it is necessary to find out if their marketing and promotioanl activities are really influencing the medical professionals in their brand recommendation processes. Questions like: To what extent are the decision making (brand preferences) of medical professionals affected by the promotional practices? What are some of the factors that medical professionals take into consideration before

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[5] United Nations. World Health Organization. Joint WHO/UNICEF meeting on Infant and Young Child Feeding, 9 - 12 October 1979. Recommendations, List of Parti

making brand recommendations have yet to be answered. It is thus the purpose of this study to investigate in depth the decision making processes of the medical professionals as regarding infant formula recommendation and/or adoption.

The value of the findings of this study can be assessed from two different points of view. First of all, from the infant formula industry's point of view, an understanding of the decision making processes concerning the products can provide manufacturers with insights into the impact of their marketing and promotional efforts on the medical professionals. If it is found that their promotional efforts have little influence on the medical professionals, the infant formula companies may be able to stand up against charges of "unethical promotion" and perhaps direct their resources to other areas.

On the other hand, if it is found that the medical professionals are indeed influenced by the promotional practices, it will be an indication to the infant formula companies that it is no time to start "de-marketing" the products. It must be emphasized here that de-marketing a product does not necessarily mean decline in sales and profits. In the short run, sales and profits may be hurt but it may turn out in the end that this is better for the companies, especially when people begin to see the companies as socially responsible ones and learn to trust them. At this point, the infant formula companies may want to start thinking of showing that they are socially responsible companies instead of continuously pushing their products to the medical professionals.

Secondly, from the public policy point of view, the findings can be useful raw materials to those who advocate breastfeeding. A review of the decision making processes may reflect the emphasis placed on breastfeeding by the medical professionals in Hong Kong (in terms of whether breastfeeding is discussed during the recommendation processes). This will help us determine the extent of breastfeeding promotion in Hong Kong which in turn will be a useful basis for suggesting further actions in the area.

Objectives of the Study

The purpose of this study is therefore, first, to provide the infant formula manufacturers and agents with insights into the impact of their promotional practices on the medical professionals' decision making processes regarding infant formula. This study will investigate the implications of the findings with particular emphasis on the implications for long-term marketing and promotional efforts. It therefore follows that a second objective for this study is to come up with a recommendation to the infant formula industry concerning directions for long-term marketing and promotional activities. Hopefully, with the above knowledge, the infant formula companies will in the future become socially responsible companies.

Finally, this study is intended to be a descriptive research, the outcomes of which will be descriptive models of the decision making processes. Hence, the final objective of this study is to provide a basis for further research. The proposed models may be tested and modified or they may

be used as foundations for empirical research. It is also hoped that the findings will be of use to the critics of bottlefeeding, although some further research or manipulation of the data may be necessary.

CHAPTER II

THE INFANT FORMULA INDUSTRY

Historical Development of the Infant Formula Industry

In th 19th century when the hospitals were first founded, cow's milk was used to feed the large population of babies. Milks of several animal species were studied and the conclusion was that cow's milk was closest to human milk as regards the chemical constituents. Despite the similarities, however, feeding problems did arise when cow's milk were used. There was adulteration, an appalling lack of cleanliness and most serious of all, difficulty in digestion. To improve the digestibility of the protein of milk, acids such as Lactic, critic or tartaric acids were added. Peptnonized or predigested milk were being sold and cow's milk treated with such preparations were sold as "humanized" milk.

Towards the latter part of the 19th century, a different product, the condensed milk, was introduced in the artificial feeding of infants. Fresh cow's milk was heated to destroy the bacteria and then evaporated to less than a quarter of the volume into a viscous honey-like substance. Sugar was added as a preservative and the product was sold in wax-capped bottles. Later in 1866, the product was marketed by Nestlé in tin boxes.

Towards the end of the 19th century, milk separators were being used in Britain and milk was separated into

cream and "separated" milk. The easy availability of separated milk and cream in large quantities led to the establishment of milk laboratories. The first of such laboratories was set up in Boston in 1892 and was followed by many others. Such laboratories undertook the preparation of feeds for infants and prepared formulas of different compositions on request. The formulas were also supplied to individuals, founding homes and hospitals.

The major breakthrough in the industry, however, occurred in 1902. During this time, the roller process for drying milk was first introduced on a commercial scale by the Swedish butter factories. In this process, liquid milk was applied as a thin film to the surface of internally heated drums. The heat drove off the water of the milk and the solids were scrapped off the surface of the drums as flakes which were milled into powder. In 1908, a large quantity of dried milk powder from New Zealand was marketed in Britain and sold under the brand name of "Glaxo". Continous efforts were made to produce a form of powdered milk which would resemble human milk in its composition. This was made possible by an improved understanding of human nutrition and by technological breakthroughs. In 1919, a formula was promoted under the name of Scientific Milk Adaptation (SMA) in which the fat of cow's milk was replaced by a mixture, the iodine value of which was the same as that of human milk fat. Although the brand was dropped in 1935 (when it was shown that the fat in it was poorly absorbed by babies), it was the fore-runner of "humanized" milk powder.

Following this, new generations of "humanized" milk appeared as knowledge grew. Each generation of "humanized" milk was promoted in its time as the most advanced form of infant feeding. Finally, in more recent times, the products (humanized milk powder) were in effect mixtures of whey proteins, sugars and vegetable oils with added minerals and vitamins.

As the baby food industry became established, competition became intense and many manufacturers began to look for export markets. This began in 1928, dropped off during the War years, and picked up again in the 1950s when the industrialized world recovered from the effects of the War. At this time, the large infant formula manufacturers began recruiting personnel for the promotion of their products. Promotion campaigns were launched on a global scale and some manufacturers even developed sales training schools. The market for infant formula expanded rapidly and the mounting profits enabled the companies to grow into strong multinational corporations as they are today.

To summarize, the historical development of the industry is illustrated in Fig. 1.

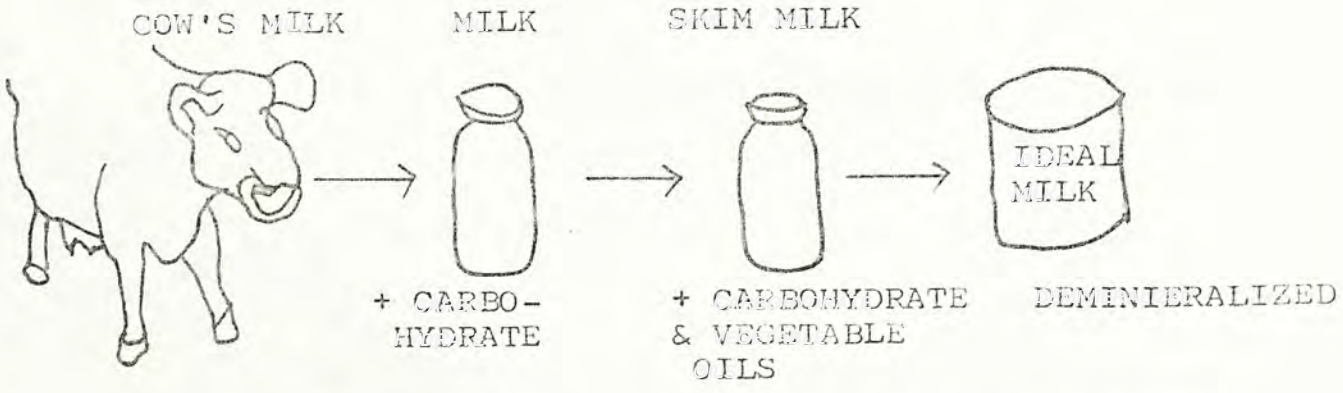

FIG. 1: HISTORICAL DEVELOPMENT OF INFANT FORMULA

The Market Situation in Hong Kong

There are no infant formula manufacturing plants in Hong Kong and all infant formulas are imported. The majority of infant formula come from the United States, Netherlands, and Australia. Some import figures are given in Table 1.

Table 1

MILK POWDER MODIFIED FOR INFANT FEEDING,

IMPORT FIGURES, NOVEMBER 1979

IMPORTED	-----NOV 1979-----		-----JAN-NOV 1979--	
FROM	QUANTITY (KG)	HK$	QUANTITY (KG)	HK$
U.S.A.	46,854	912,507	1,529,188	25,686,826
Canada	21,623	209,774	304,930	2,898,991
Denmark			29,937	318,044
Switzerland			864	24,840
Netherlands	73,029	1,087,002	1,395,419	17,789,359
United King.	8,426	123,778	116,073	1,328,146
Phillippines	13,062	192,500	44,433	637,035
Japan			114,608	1,104,809
Singapore			96,856	930,726
Australia	198,498	2,092,266	1,980,327	20,479,536
New Zealand			468	4,337
TOTAL	361,492	4,617,827	5,613,103	71,202,536

SOURCE: Hong Kong, Census & Statistics Department, Hong Kong Trade Statistics - Imports, November 1979, p. 3

The market is shared by products from major infant formula companies such as Nestlé, Wyeth International, Mead-Johnson, Bristol-Myers, Cow & Gate, and Abbott Laboratories. Among these companies, products from Nestlé and Wyeth dominate the market. Although the market is competitive, some price differences exist between the products of some companies. For example, products from

Nestle represent the least expensive side of the market. On the other hand, products from Wyeth (the SMA and the S-26) and from Abbott Laboratories (the Similac) are being sold at higher prices. Finally, on the other extreme, special formula for sick babies are available from Bristol-Myers and these are the most expensive ones. Some major brands and their prices are given in Table 2.

Table 2

COMMON BRANDS OF INFANT FORMULA IN HONG KONG

BRAND NAMES	SELLING PRICE PER LB.
Cow & Gate Premium	HK$12.00
Cow & Gate Babymilk Plus	8.50
Enfamil	14.30
Lactogen	7.50
Nan	10.60
S-26	12.60
SMA	11.70
Similac	11.80

In terms of distribution, the more common brands such as Lactogen, SMA, S-26, Cow & Gate, etc. are readily available. In most cases, infant formula are sold in one pound and 2½ pound cans. Some brands like S-26 and Lactogen even have 5 lb. cans. In terms of customer, the products are bought by mothers and sometimes by the father, perhaps even by other members of the family. Mothers are usually very concerned about the health of their babies (particularly for the first babies) and therefore are willing to give the best that they can afford to their babies. Some mothers will ask doctors and nurses for advice on feeding and recommendations while some will

have their minds already made up about a brand. Such preconceptions about particular brands are mainly the results of continuous marketing and promotional efforts by the infant formula companies and the agents. The next section is a detailed description of the industry's marketing and promotional practices.

Marketing and Promotional Practices of the Infant Formula Companies in Hong Kong

Since the market is quite competitive, infant formula companies and agents in Hong Kong all have very aggressive marketing and promotional activities. The general objective of these companies is to penetrate the market and create consumers. The marketing strategies are consciously decided upon and implemented through sales personnel, milk nurses (nurses who represent the company), and distributors. The milk nurses (who do not wear nurse uniforms) have been trained in product knowledge and they often talk to mothers in the maternity ward about baby care and of course, about their products.

The different infant formula companies may have different marketing and promotional strategies, but they can all be summarized as follows:

Baby/Mothercraft Booklets and Instruction Pamphlets

This is one of the major forms of promotion used by the infant formula companies. Some typical titles are "My Baby Book" (published by Wyeth International) and "Similac Baby Book" (published by Ross (Abbott) Laboratories). These booklets are distributed free to the mothers in the maternity wards, clinics, Mother and Child Health Centres,

and sometimes to the doctors and nurses. In some cases, milk bottles and bags for carrying things are also given free to the mothers. The booklets usually contain information on baby care, instructions for preparing infant formula and information on antenatal and postnatal care for the mothers. The booklets are distributed regardless of the education level of mothers as there are always pictures to show correct or incorrect feeding methods. Some pre-1975 booklets did not even mention breastfeeding. However, as public concerns about the harmful effects of bottlefeeding arise, recent promotional booklets begin to discuss breastfeeding and recommend "mixed feeding" instead (where bottle is used as supplement to breast milk).

Information Leaflets/Booklets

These are the promotional materials distributed mainly to the doctors and senior nurses. Such booklets usually provide information on the chemical composition of the particular brand of infant formula. There are usually nicely drawn charts showing the content and comparing it with the constituents of breast milk.

Free Samples and Offers of Free Gifts

Almost all milk nurses bring samples along with their visits. The objective is to leave the samples with the doctors and nurses so that whenever a mother comes for a recommendation, the "advisor" can easily give her a sample. In addition, since research surveys indicated that mothers would choose an infant formula based on the implied or actual brand endorsement of the hospital[6], the infant

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[6]"Baby Bottles Banned in New Guinea," The Dallas Morning News 3 November 1977, Section C, p. 8. in S. Sethi and J. E. Post, "Infant Formula Marketing in Less Developed

formula companies have been willing to supply infant formula to some hospitals on a continuous basis. Doctors and nurses are given discounts when they need infant formula for their own babies. Aside from these, small items like baby poster, calendars and charts for calculating delivery dates, appointment books, etc. are also given to the hospitals and the doctors. In a few instances, gimmicks are even used to induce the hospitals to favor a particular brand, such as by means of equipment donation.

Sponsor of Medical Conferences

As a goodwill and to gain recognition by the doctors and medical societies, almost all infant formula companies act as sponsors for medical meetings and conferences.

Mass Media Advertising

The infant formula companies also advertise their products through mass media directly to the mothers, although this has become less important because of the increasing pressure from health authorities and non-profit organizations. In the past, there had been advertisements in magazines, newspapers, on television and on billboards. The recent trend however, as mentioned previously, is to use less and less and perhaps eliminate all mass media advertising.

Mothercraft/Baby care Classes

On some occasions, the infant formula companies conduct mothercraft/babycare classes. These are sometimes conducted at exhibition sites (such as that for hygiene and health) or a mother who is interested can ask for

admissions tickets from the companies. Mothers are taught how to bottlefeed their babies in these classes and very often breastfeeding is not discussed (or if it is discussed, to a limited extent).

To summarize, most infant formula companies have similar marketing and promotional practices. Their promotional efforts have always been directed to the mothers and the medical professionals until a concensus to shift promotion away from the mothers is reached recently. Except for the use of mass media, most of the traitional promotional methods are still being used. Such promotional practices include the distribution of baby/mothercraft booklets, information leaflets, free samples, and the offer of gifts.

In response to increasing pressure for social reponsibility, some large infant formula companies like Abbott Laboratories and Wyeth International have even established their own code of ethical marketing practices. The code would require the primacy of breastfeeding in all of their product information and labelling, to include precise product use information, and to eliminate in-hospital promotion and solicitation by personnel who were paid on a sales commission basis. Other companies like Nestlé and Bristol-Myers stated their own policies but do not respond actively to such code. It appears that a future trend for the industry will be to use only socially responsible and ethical marketing and promotional practices. Also, the targets of promotion will no longer be mothers but medical professionals.

CHAPTER III

LITERATURE REVIEW

In the last decade, there has been increasing efforts in building models of buyer behavior. Researchers, using laboratory and field setting, are studying how consumers process information and decide to buy specific products and brands. Psychological theories and various models have been applied to the study of consumer choice by marketing students. These models range from the simple descriptive models to the more sophisticated mathematical and computer models. In general, in situations when relatively little is known about the rules depicting a buyer's behavior, a descriptive model is used. On the other hand, in cases when there is some knowledge on the rules depicting buyer behavior, the more sophisticated models are used. Since relatively little is known about the brand recommendation/adoption processes of the medical professionals and hospitals, this paper will focus on the descriptive models of buyer behavior which are in fact information processing models.

The Information Processing Models

An information processing model can be defined as "a representation of an individual's attitude structural properties for the particular task of interest; the organization of this representation is in terms of memory, processes, and programs of processing, and input-output

linkages[7]. The theory of information processing models originates from the work of Newell, Shaw and Simon[8]. In their paper, the behavior of a ysstem is described as a well specified program, defined in terms of elementary information processes. The writers set forth a theory of human problem solving which postulates:

> 1. A control system consisting of a number of memories, which contain symbolized information and are interconnected by various ordering relations....
> 2. A number of primitive information processes, which operate on the information in the memories....
> 3. A perfectly definite set of rules for combining these processes into whole programs of processing[9].

Since then, a decision making process is viewed as a net through which an array of cues passes. Such cues may include choice object attributes (such as color, price, weight), external environmental attributes (such as use experience, word-of-mouth), and internal variables (such as perceived risk towards a product). Such models are termed decision-net models.

In the information processing models, there is also a basic assumption that man receives continual information input from his environment and processes this information as an integral part of making choices. In particular, an individual is assumed to have certain rules by which he processes and manipulates information.

A common way of obtaining the descriptive models is to have each subject think out loud while he/she is per-

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[7]J. R. Bettman, "Decision-net Models of Buyer Information Processing and Choice: Findings, Problems, and Prospects," in Buyer/Consumer Information Processing, ed. G. D. Hughes and M. L. Ray (North Carolina: The University of North Carolina Press, 1974), p. 60.

[8,9]Allan Newell, J. C. Shaw, and Herbert A. Simon, "Elements of a Theory of Human Problem Solving," Psychological Review 65 no. 3 (1958):151.

forming the behavior being modeled. Such a record is termed a protocol. Based on the protocol, a model of how the subject processes the data from the environment to make a choice is constructed. One characteristic of information processing models, which also happens to be a limitation, is that each subject is likely to have a different decision making process and hence a different model.

Application of Information Processing Theory To the Individual's and Organizational Buying Behavior

So far, only a few descriptive models of consumer choice have been developed. The information processing theory is applied to various aspects such as the choice of women's clothing[10], brand preferences[11], and grocery products[12]. In such models, general means-ends framework for examining buyer choices and rules depicting buyer behavior are established. More detailed models were constructed by Bettman[13] when he had two consumers give protocols as they shopped over a 6-to-8 week period. In these models, one of the important cues was perceived risk, with subprocesses being utilized depending upon the level of risk present. Fig. 2 is an adaption from Bettman's work to illustrate the application of the information processing theory to consumer decision making. In this figure, the questions raised by the decision maker represent the nodes

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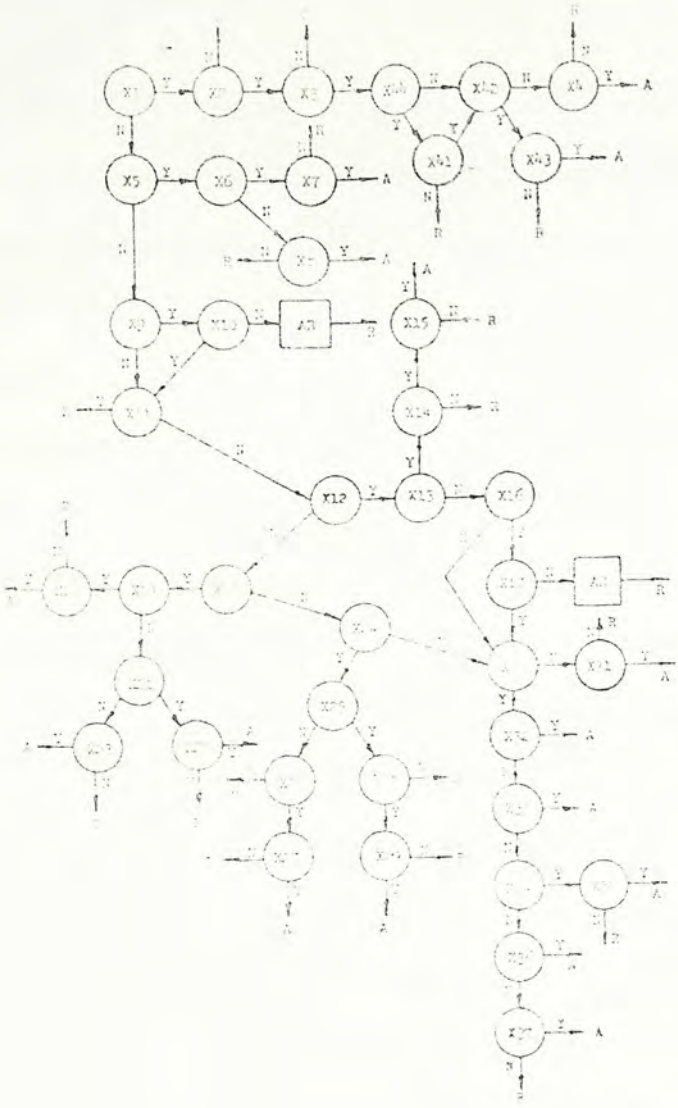
[10] M. Alex, G. Haines, and L. Simon, "Consumer Information Processing: The Case of Women's Clothing," Marketing and the New Science of Planning. Proceedings of the American Marketing Association Fall Conference, 1969, pp. 197-205.

[11] F. A. Russ, "Consumer Evaluation of Alternative Product Models," Proceedings, of the American Marketing Association, 1971, pp. 664-668.

[12,13] (See bottom of next page)

for decision making. Some of the more recent models even include the effects of social influences on the information processing processes.

[12,13] James R. Bettman, "Information Processing Models of Consumer Behavior," Journal of Marketing Research 7 no. 3: pp. 370-376.



KEY

Dictionary: A: Accept
R: Reject
AR: Associate risk (bad experience) with this product
Y: Yes
N: No.

X1: Is this meat or produce?
X2: Is price below justified level?
X3: Is color okay?
X4: Is this the biggest "okay" one?
X5: Is this eggs?
X6: Is the price of extra large over 5 cents more than the price of large?
X7: Is this large size?
X8: Is this extra large size?
X9: Was this product bought last time for this product type?
X10: Was experience with it okay?
X11: Is risk associated with this product (bad experience)?
X12: Is this product class high risk?
X13: Do children or husband have a specific preference?
X14: Is this their preference?
X15: Is it the cheapest size?
X16: Does this class have health (hygiene, diet) factors?
X17: Is this okay on these factors?
X18: Is this for company?
X19: Is the cheapest brand good enough?
X20: Is this the cheapest?
X21: Had a good experience with any brands in this class?
X22: Is this that brand?
X23: Is this the cheapest national brand?
X24: Are children the main users?
X25: Did they state a preference this week?
X26: Have they used this up in the last two weeks?
X27: Is this cheapest size?
X28: Is this that one?
X29: Is this the cheapest size?
X30: Are several "okay" brands cheapest that they have in stock?
X31: Is this the cheapest (that they have in stock)?
X32. Have a coupon for this one?
X33. Is this one biggest?
X34: Is there a single national brand?
X35: Is this it?
X36: Have I used this before?
X37: Is this the closest?
X41: Does this feel okay?
X42: Is this for a specific use?
X43: Is this size okay for that?
X44: Is this produce?

Figure 2: Information Processing Model for Consumer C1

SOURCE: J. R. Bettman, "Information Processing Models of Consumer Behavior," Journal of Marketing Research 7 no. 3 (August 1970) 370.

In general, these information processing models that have been developed are very detailed and individualized models. The models are process-oriented, have been modelled from a descriptive point of view, and the approach is towards emphasizing the interaction between individual's predispositions and situational factors. In addition, the information processing of an individual may also be influenced by exogenous variables such as importance of purchase, personality variables, social class, culture, time pressure, financial status, and organization, as proposed by Howard and Sheth[14].

As we move higher up in an organization and consider it as a buying unit, we may apply the framework used in industrial adoption process models to explain the decision making processes. Such decision making processes are in fact made up of decisions made by individuals in the deciding group.

So far, virtually all studies of industrial buying patterns and processes have been of the descriptive, case study variety. The models recognize the interaction of organizational, social, individual, and environmental forces as influences upon the decision processes of organizations. In general, the models contain three primary elements: antecedents, process, and results. The antecedents include the adopting firm's identity, the decision group's identity, and the participants' perception of the situation. The firm's identity is in turn composed of such

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[14]J. A. Howard and J. N. Sheth, "Theory of Buyer Behavior," in Marketing Models: Behavioral Science Applications, ed. by Ralph L. Day and Thomas E. Ness (Scranton: Int'l Textbook Company, 1971), pp. 507-533.

variables as the firm's age, research and development committment, its environment, economic constraints, profitability, and its rate of growth. The second element, the process, consists of a series of stages: Awareness, Interest, Evaluation, Trial, and Adoption. The final element is the results, which will either be acceptance or rejection of the innovation[15]. At the same time, it is assumed that individuals in the deciding group will go through their own information processing processes. In a model by Sheth[16], the individual is represented through such variables as personality, life style, role orientation and perceptual biases. Joint decision making represents social factors and situational factors such as organization size, degree of centralization, and organization orientation.

In general, the models of industrial or oganizational buying behavior have all recognized the set of interactions that constitutes organizational buying behavior. The models have all taken on a modular approach and they have been built on the four major components: environment, organization, individual, and group or social factors. Perhaps the differences only lie in terms of the way the interactions are being discussed.

To illustrate in more details the models by Rogers and Sheth, the following figures are adapted from the works of the two writers. These figures are used later in helping to develop the conceptual framework for the study and also the questions to be asked during the interviews.

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[15] E. M. Rogers, The Diffusion of Innovation (Free Press of Glencoe, 1962).

[16] J. N. Sheth, "A Model of Industrial Buyer Behavior," Journal of Marketing 37 (October 1973), pp. 50-56.

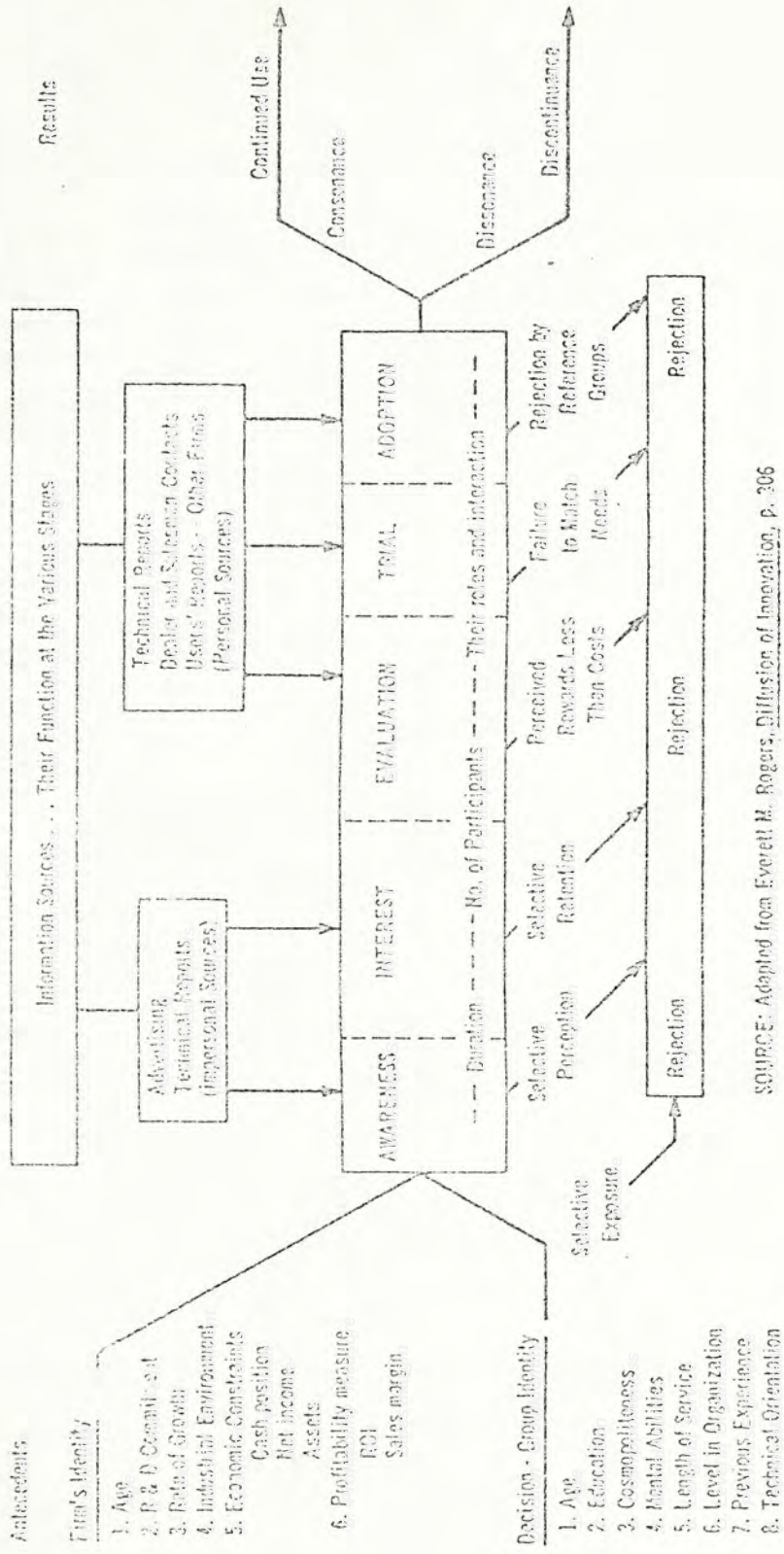

Figure 3: Industrial Adoption Process Model

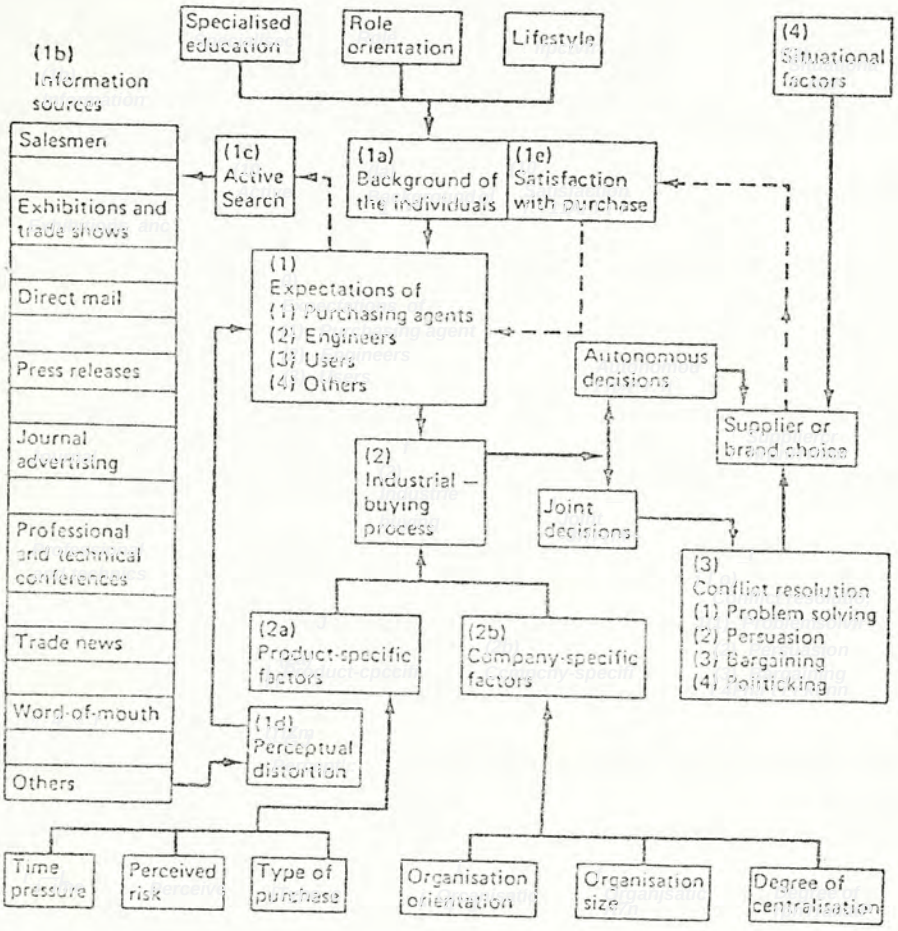

Figure 4: The Sheth Integrative Model of Industrial-Buying Behavior

SOURCE: Sheth, "A Model of Industrial Buyer Behavior"

CHAPTER IV

CONCEPTUAL FRAMEWORK AND METHODOLOGY

Conceptual Framework

This study makes use of the information processing theory and believes that it is possible to describe a person's behavior by a well specified program, which is defined in terms of elementary information processes. The decision making processes of the medical professionals in infant formula recommendation/adoption processes are viewed as nets through which arrays of cue passes. Such cues may include choice object attributes (such as quality of the formula, its price and composition, etc.), external environmental attributes (such as experience of usage, word-of-mouth, information sources, governing policies, etc.) and internal variables (such as perceived risk towards the choice of a brand of infant formula and attitude and beliefs of the decision maker. Medical professionals receive continual information input from the environment and will process this information as an integral part of making choices. Thus, a medical professional's decision making process concerning infant formula recommendation/adoption is likely to be the results of:

1. A memory consisting of an array of cues,
2. Simple processes that operate on the cues and develop mediating constructs,
3. A network that represent rules for combining cues.[17]

On a higher level, when one talks about the infant formula adoption process of a hospital, one can use the

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[17] Arch G. Woodside and R. A. Fleck, Jr., "The Case Approach to Understanding Brand Choice," Journal of Advertising Research 19 no. 2 (April 1979):23.

theory of an Industrial Adoption Process Model[18] (See Fig. 2) and Industrial Buying Behavior model[19] (See Fig. 3) to understand the processes. First, there are the antecedants, such as the information sources, the organizational structure, and the decision group's background (education, length of service, previous experience, etc.). Secondly, there is the process itself, which consists of the stages of Awareness, Interest, Evaluation, Trial and Adoption. Finally, there is the result, which is either acceptance or rejection of the brand.

In more details, Awareness is linked to the level of marketing support for the brand; Acceptance to the screening out of impossibilities by setting product selection criteria; and Evaluation to an individual's evaluation as well as the group's decision[20].

Research Design

This study is an exploratory study of the infant formula recommendation/adoption processes of the medical professionals because so far there has been little research effort in this area and very little (or almost nothing) is known about the decision making processes. Hence, the major emphasis of this study is on the discovery of ideas and insights. The study is characterized by flexibility with respect to the methods used for gathering information

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[18] E. M. Rogers, The Diffusion of Innovation (Free Press Of GLencoe, 1962).

[19] J. N. Sheth, "A Model of Industrial Buyer Behavior," Journal of Marketing 37 (October 1973), pp. 50-56.

[20] Jean-Marie Choffray and G. L. Lilien, "Assessing Response to Industrial Marketing Strategy," Journal of Marketing 42 (April 1978):20-31.

and developing hypotheses. The literature search serves as a foundation for developing the conceptual framework for the study while the experience survey attempts to tap the reservoir of knowledge and experience possessed by those familiar with the subject which, in this case, are the medical professionals.

Sample Design

Since the aim of this study is to obtain insights rather than to obtain accurate pictures of the decision making processes, a selected sample of people working in the area is used. It will be a waste of time to interview those who have little relevant experience in the area.

The population is defined as all hospitals in Hong Kong where there are maternity wards. The sample is to consist of all hospitals (out of the 21 such hospitals) that agree to participate in the study. Within each sample element (i.e. each hospital), a subsample consisting of 1 hospital administrator, 1 doctor from Obstetric/ Paediatric Unit, and 1 nurse with relevant experience is taken so that people with differing points of view can be included in the study. The origin list of hospitals and their addresses and phone numbers are obtained from the telephone directory.

Design of Questionnaire

This study does not use a detailed and structured questionnaire. The interviews are all unstructured and informal and the questions raised are based on the conceptual framework discussed previously. The objective is to identify the variables that influence (or are incorporated in)

the decision making processes. The follow-up questionnaire is somewhat structured and the questions asked are basically the same as those set forth in the interviews. This questionnaire is to serve as a check for consistency in answers given during the interviews as well as a tool to help explain the findings. Because the medical professionals all have higher education, the questionnaire is set out and administered in English. For the interviews, Cantonese is used except in cases when the respondent does not speak Cantonese.

Data Collection

To add to the literature search on the marketing and promotional practices of the infant formula companies, letters requesting interviews are sent to 7 infant formula companies/distributors (wholesale). As it turns out, interviews are conducted with the staff of 5 companies. The other two companies have refused to participate, the reason for one being that the General Manager is away while the other does not want to release any information.

For the study itself, letters requesting assistance in the research project are sent to the administrators of all 21 hospitals. As it turns out, 10 hospitals (47.62% of population) agree to help. However, only the staff of nine hospitals are interviewed. The reason is that there has been difficulties in arranging interviews with the medical staff of this hospital (which is not interviewed) and the staff will not be free until at a later date. Hence, the medical staff of this hospital is not interviewed. Such a hospital is a private hospital, with 40 beds in the Maternity Ward (not including 23 beds for ante-natal).

Among the 11 hospitals which refuse to participate, 8 hospitals are private hospitals with no more than 30 beds in the maternity ward of each (usually with about 15-20 beds). The remaining 3 hospitals are Government hospitals and they represent approximately 415 beds (60+265+90) in their maternity wards. The reasons given for not participating include: busy, the doctors are not under employment of the hospital and it will be difficult to arrange interviews with them, the hospital does not want to release any information, "please wait until we contact you", etc.

For the hospitals which have agreed to help, appointments are made with the hospital administrator, a doctor, and a nurse if possible. In this aspect, the outcome is that most hospital administraotrs are either too busy or have delegated the responsibility concerning infant formula to other personnel in the hospital. Therefore, the resulting sample becomes:

No. of administrators:	3
No. of doctors:	6
No. of nurses:	7
No. of hospitals:	9

In terms of response rate, 9 out of 21 hospitals participate in the study (42.86%). However, as we classify the participates into Government and private (including subsidized hospitals) hospitals, we can see that the response rate for the Government hospitals is low (only 1 out of 4 or 25%*) while that for the private hospitals (assuming they do not vary too much in capacity and will have an average of about 20 beds in the maternity ward of each) is comparatively better (50%). Hence, the sample (in terms of the number of

*This ref[illegible] hospitals.

people the hospitals serve) under-represents the lower income group (who are likely to go to the Government hospitals) and just represents the middle to upper income group (who are likely to go to the private hospitals).

The interviews with the medical professionals are conducted between Mid-March and early April (3 weeks). The conversation is recorded (if permitted) or noted down. Each subject is interviewed for about 30 to 40 minutes. After the interview, each subject is notified that a follow-up questionnaire (by mail) will follow and cooperation is requested. As it turns out, all questionnaires except one are returned.

Data Analysis Procedures

Using information from taped conversations or from notes taken during interviews, a decision making process flow diagram is drawn for each subject with respect to the individual's own brand recommendation process. At the same time, the particular hospital's adoption process as seen by this individual is also sketched out. In cases when more than one person is interviewed from a hospital, the sketches of the subjects' perceptions of the hospital's adoption process are considered simultaneously to arrive at a generalized adoption process flow diagram for the hospital.

After the flow diagrams are drawn, the answers given by each individual in the questionnaire are reviewed accordingly. If the answers to the questionnaire are more or less consistent with the information obtained from interviews, the flow diagrams are finalized. Otherwise,

the flow diagrams are revised accordingly. For the one case in which the questionnaire is not returned, the drafted flow diagram is taken to be the final diagram. Finally, as a supplement to the flow diagrams, remarks are put under each diagram to depict the uniqueness of each situation. This will help readers understand the process and the situational factors better.

Limitations of the Study

The major limitation of the study lies in the methodology used in the research. Since each subject is a unique person, the decision making process of each of the subjects is a unique process in itself. Thus, it is very difficult (and perhaps meaningless) to make any generalizations. This problem is compounded by possible variances in interpreting the data. Since the flow diagrams are really subjective drawings, it is not uncommon for two persons who are given the same set of data to have different interpretations and thus come up with different flow diagrams. Hence, the findings may not be representative of the general situation.

CHAPTER V

FINDINGS AND CONCLUSION OF THE STUDY

Although the recommendation processes of the subjects can be unique, the findings indicate that there are indeed some commonalities and some generalizations, although limited, can be made.

The generalizations are made on the basis of the flow diagrams which show the individuals' decision making processes and the hospitals' adoption processes. All flow diagrams can be found in Appendix 1 and they have been arranged in the following manner:

In the two summaries which follow, references (put in parentheses) are made to the flow diagrams. For example, to illustrate that the brand recommendation process is usually initiated by a mother's request for brand recommendation, the relevant figures are cited and they appear as Fig. 5:1; Fig. 7:1 10; Fig. 9:1 3, etc. This means that if we refer to Figure 5 and go to Box no. 1 (and its explanation) in the Key, we will see that the mother is initiating the recommendation process. Similarly, we can refer to Figure 7 and follow through the decision path from Box no. 1 to Box no. 10 and we will be able to understand the situation better.

In cases when only figure numbers appear in the parentheses, it means that the points made are being illustrated by the remarks under the particular figures. For example, adoption of rotation policy by hospitals are illustrated by Figures 21, 22 and 25.

Summary - The Individual's Recommendation Process

Although the recommendation processes of the subjects can be unique, the findings indicate that there are indeed some commonalities and some generalizations, although limited, can be made.

First, the infant formula recommendation processes are really simple processes. Rather than evaluating the various brands of infant formula at the instant of consultation by mothers, the medical professionals will stick to the brand that a baby is on, for example when it is in the hospital (Fig. 7:1→2→3; Fig. 9:3→5→6; Fig. 10:1→2→3; Fig. 11:1→3; Fig. 12:1→3→4→5; Fig. 13:1→3→4→5; Fig. 14: 1→3→4; Fig. 16:1→8→10→12→13→14→15; Fig. 17:1→2→3; Fig. 19:1→3→10→11). On the other hand, some medical professionals will draw brand names from a previously established "acceptable" list of brands (Fig. 5:1→3→5; Fig. 10:1→14→6; Fig. 11:1→2→4→8→9→10→11; Fig. 12:1→3→8→9 or 1→3→8 10→11→13→9; Fig. 13:1→3→8→7→10→11→12; Fig. 15:1→3→ 4 or 1→3→5→6→4; Fig. 20:1→6→7→8→10→12→14→15). Such acceptable list is first established when the individual is considering and comparing the various brands carefully. In most cases, this occurs when the individual is giving advice or opinion to the hospital on the issue of infant formula to be used in the hospital. This type of thought processes usually occur once and the individ

process again only when required, for example when special circumstances arise, when the individual is required to evaluate a new brand (or any brand that he/she is unfamiliar with), or when a specific brand is mentioned by a mother (Fig. 6:1→3→5→6; Fig. 8:1→4→6; Fig. 10:1→14→7→9; Fig. 11:1→2→4→5; Fig. 12:1→3→8→10; Fig. 13:1→3→8→7→10; Fig. 16:1→8→10→12→13→14→16; Fig. 19:1→3→4→5→6).

Hence, the brand recommendation process of a medical professional is likely to be a straight and routine and simple question-and-answer type of interaction, usually initiated by a mother's request for brand recommendation or feeding advice (Fig. 5:1; Fig. 7:1→10; Fig. 8:1; Fig. 9:1→3; Fig. 11:1; Fig. 12:1; Fig. 13:1; Fig. 14:1; Fig. 15:1; Fig. 19:1). No medical professionals will volunteer to give brand recommendations, although some will initiate a discussion on feeding which may eventually lead to the discussion of infant formula (Fig. 6:1; Fig. 10:1; Fig. 16:1→2; Fig. 17:1; Fig. 18:1; Fig. 20:1→2→4→5 or 1→6).

Secondly, medical professionals, when asked for brand recommendations, are likely to react in one of the following manners:

1. Give mother a list of brand names to choose from (Fig. 5:5; Fig. 13:1→3→8→7→10→11→12; Fig. 15:1→3→4).

   This list is really the individual's acceptable list which in most cases coincide with the list of brands used by the hospital in which the person is working, since these will be the brands that the individual will have more experience and confidence in.

2. Ask mother's own brand preference (Fig. 7:7; Fig. 8:4→6→8; Fig. 11:1→2→4→5→6; Fig. 13:1→3→8→7→10→13; Fig. 17:

1→2→3; Fig. 20:1→2→4→5→6→7).

If the preferred brand is an acceptable brand, then the brand is recommended.

3. Standardize on one brand and recommend such brand to all mothers except for those cases in which the babies have special problems (Fig. 9:1→3→5→6; Fig. 10:1→14→7→9→10→11→12; Fig. 11:1→3; Fig. 12:1→3→8→10→11→12; Fig. 14:1→3→4; Fig. 19:1→3→10→11).
4. Give no brand recommendations. This is usually the case for a medical staff who does not have enough experience in infant formula to have confidence in any brand (Fig. 8:16; Fig. 14:1→3→5→6; Fig. 16:8→9; Fig. 18:1→2→4; Fig. 20:1→2→3 or 12→13).
5. Recommend appropriate brand according to individual case (Fig. 13:1→3→4→6 or 1→3→8→7→9; Fig. 16:8→9→10→11; Fig. 19:1→3→4).

It can be seen from the findings that whether a doctor/nurse will make brand recommendations, leave the decision to the mothers, or react in any of the above manners is dependent on such person's experience and knowledge about infant formula, especially when a baby has special problems (Fig. 5:1→3→4; Fig. 8:1→4→5→19; Fig. 11:8→9→10→12; Fig. 14:1→3→5→6; Fig. 18:1→2→4; Fig. 20:1→2→3). Medical professionals with less experience in infant formula will tend to refer the case to more experienced personnel (Fig. 5: 1→3→4; Fig. 8:1→4→5→19; Fig. 14:1→3→5→6; Fig. 16:8→9; Fig. 18:1→2→4; Fig. 20:1→2→3) or make no recommendations. In some cases, the choice is left to the mother (Fig. 7:1→10→7→8→11; Fig. 10:1→14→7→8; Fig. 11:8→9→10→12). On the

other hand, medical staff with substantial knowledge and experience in infant formula is likely to be confident in their judgement and hence feel more comfortable about recommending brands. In most cases, medical professionals will try to conform with a mother's preference (Fig. 7:7; Fig. 10:14; Fig. 11:4; Fig. 12:8; Fig. 13:7; Fig. 15:1). However, this will be subject to the health condition of the baby in question (Fig. 5:3; Fig. 7:2; Fig. 8:5; Fig. 9:1; Fig. 10:2; Fig. 12:4; Fig. 13:4; Fig. 16:14; Fig. 17:2; Fig. 19:4; Fig. 20:10). Otherwise, several brand names will be mentioned to a mother when brand recommendations are asked for. The reason is that the medical professionals are likely to consider several brands as equally good and to be fair, they do not like to favor any particular brand(s).

Thirdly, all medical professionals admit that the brands of humanized infant formula are really very similar. There is really no systematic way of differentiating the brands (unless chemical tests are performed) except in terms of prices and the reaction of babies to the various brands. In some cases where detailed compositional breakdowns are given on the promotional literature, a paediatrician may be able to differentiate the brands in terms of composition. However, minor differences in composition will not create significantly different effects on babies. Usually, different medical professionals can have different brand preferences and the choice of brands may be a subjective process.

Fourthly, given different training backgrounds, the sources of information that an individual relies on vary accordingly. The general practitioners and the nurses, with less "technical" knowledge about the product, are

likely to rely on personal experience and promotional literature as their sources of information about infant formula (Figures 5, 7, 14, 15, 16, 17, 18, 19, 20). On the other hand, paediatricians are likely to get their information about the product from special research reports, medical journals, and past experiences (Figures 6, 8, 9, 19, 11, 12, 13). By the same token, general practitioners and nurses are thus more susceptible to promotional efforts put forth by the infant formula companies. The general practitioners and the nurses find information in promotional literature useful (such as the post-natal exercises) while paediatricians tend to complain that the chemical breakdown of the infant formulas are not detailed enough.

With respect to breastfeeding, most doctors recognize that breastfeeding is best and agree that all mother should breastfeed whenever possible (Figures 5, 6, 8, 9, 11, 12, 13, 16, 17, 20). On the other hand, although nurses hold the same opinion, they tend to be more sympathetic with working mothers and consider bottlefeeding good in terms of the convenience it provides to the working mother (Figures 10, 18, 19). Some nurses even feel that bottlefeeding is as good as breastfeeding (Figures 7, 14, 15).

Finally, infant formula is considered as a type of product which lites between the category of medical items and the category of food products. Because of this, the product is independent of successes in other products by the same manufacturer. All subjects (except one general practitioner) indicate that they do not associate particular brands with other products from the same company and they certainly do not think that an infant formula manufactured by a chemical

(drug) company is necessarily better than that manufactured by a food products company. The exception, the one general practitioner, thinks that there may possibly be some association but he is not absolutely sure on this issue.

Summary - The Hospital's Adoption Process

A major finding of this study is that a hospital's infant formula adoption process is governed by its policy towards the use of infant formula. For example, there are four kinds of policies concerning infant formula:

1. Rotation (Figures 21, 22, 25).

The hospital uses a particular brand of infant formula for a period of 2 to 3 months and then switch to another brand and use it for the same time period. The number of brands to use in the rotation cycle will be a function of the time span (i.e. a 2-month rotation period will require 6 brands for one year) or it will be an optimum number (like 6 to 8 brands).

2. Standardizing on one brand (Figures 23, 24).

This is a less common case as most medical professionals do not like to be accused of "favoritism", especially when infant formula are supplied to the hospitals free. However, in one case where there is a large number of beds in the maternity ward, the hospital has standardized on one brand because it will be very much easier for the staff in the milk kitchen. In another case, the hospital usually buys the infant formula and the decision maker may have thought that he is not obliged to be "fair" to the companies.

3. Let mothers make their own brand choices (Figures 27, 28, 29).

This is more likely the case for the small private hospitals. The size of the maternity ward is small enough

so that even if mothers choose different brands, it will not cause very much inconvenience for the staff in the milk kitchen.

4. Using several brands simultaneously (Figure 26).

This is most likely to be found in hospitals with large maternity wards. The hospitals want to be fair to the infant formula companies and the large number of beds in the maternity ward makes it possible to divide up the beds and use 5 to 6 brands of infant formula siumultaneously.

The following is a table showing the policies adopted by the various hospitals.

Table 3

POLICIES ADOPTED BY THE HOSPITALS

HOSPITALS / POLICIES	GOVT.	SUBSIDIZED	PRIVATE	TOTAL
Rotation	-	1	2	3
Standardization	1	-	-	1
Let mothers choose	-	-	4	4
Use simultaneously	-	1	-	1

Whether or not a particular hospital adopts one of the above policies is usually a function of the major decision maker's attitude and beliefs and the hospital's usual practice. For example, a decision maker who wants to be fair to the infant formula companies and yet make it easy for the staff in the milk kitchen is likely to adopt a rotation policy. Government or Government-subsidized hospitals, with large number of beds in their maternity wards, are likely to either adopt rotation (Fig. 22), standardize on one brand

(Fig. 24), or use different brands simultaneously (Fig. 26). Private hospitals (Figures 23, 27, 28, 29) will often leave the choice of brands up to mothers because their maternity wards are smaller and they charge a higher fee.

As for the decision makers, hospital administrators, if they are not doctors themselves, are more likely to delegate the responsibility for infant formula to the staff below him/her. Some administrators are involved in the hospitals' decision making processes but their roles are more in terms of being the persons who give the final "yes" or "no" (Fig. 21). The major influence on the adoption process is likely to be from the paediatricians in the hospitals as they are really the "specialists" in the area. For some hospitals, the ultimate decision maker may be one person (Figures 23, 24, 25, 27, 28, 29), whether it be the administrator, the paediatrician, or none of the staff in the hospital (as the hospital leaves the matter in the hands of the mothers). In others, the decision may be made by a group consisting of the administrator, the paediatricians, the senior nurses with relevant experiences, and sometimes the obstetricians (Figures 22, 26). In such cases, the influencing power of group members will vary from equal participation to concentration of authority on one person.

There are some common factors that most hospitals take into consideration during their brand evaluation and adoption processes. These factors are: composition of the infant formula, availability of the brand in the market, reliability of the manufacturer in terms of quality control, past usage experiences and in some cases, the selling prices. With respect to prices, most medical professionals believe

that all mothers are willing to pay for the higher priced brands as long as they are good for their babies. Hence, some hospitals, in their brand evaluation processes, do not take selling price as a critical factor (Figures 23, 25). On the other hand, other hospitals with the notion that all humanized infant formula are similar are more likely to recommend cheaper brands for the benefits (financially) of the mothers, especially when these hospitals serve people of lower income group (Figures 21, 22, 24, 26).

The following Table shows the responses of the hospitals to the various factors for consideration in adopting a particular brand of infant formula.

Table 4

FACTORS WHICH HAVE BEEN TAKEN INTO CONSIDERATION BY HOSPITALS DURING BRAND EVALUATION PROCESSES

FACTORS	NO. OF HOSPITALS*
Composition of the formula	6
Availability of brand in the market	4
Reliability of mfr. in terms of quality control	3
Past experience in usage	4
Price	4
Educational level of mothers	0
Convenience for staff in milk kitchen	2
Fairness to infant formula companies	4
Supply record	1

*The three hospitals which leave the choice to mothers are not included in the above Table.

Finally, decision makers with different trainings and backgrounds are more likely to place their emphasis on different evaluation criteria. For example, a paediatrician is likely to be more concerned about the detailed compositional

breakdown of the infant formula whereas a nurse in the maternity ward or nursery will be more concerned about the reactions of babies to the particular brand of infant formula.

Aside from the above findings, the study also reveals the situation of breastfeeding in Hong Kong. Only a few hospitals in Hong Kong admit that they are actively advocating breastfeeding (Figures 23, 28). However, 3 hospitals (Figures 23, 28, 29) have been successful in such effort. These few hospitals are successful because of the active effort of the medical staff and of course, the willingness of the mothers to breastfeed. The study indicates that most of these willing mothers are expatriates who choose to breast-feed. In a few cases, Chinese mothers belonging to the upper social class may be persuaded to try breastfeeding. However, in most cases, Chinese mothers prefer bottlefeeding.

Despite the fact that all hospitals and medical professionals recognize that breastfeeding is best, the choices are often left to the mothers (Figures 21, 22, 24, 25, 26, 27, 28). These people have taken on the notion that mothers who come in already have pre-conceived ideas on bottlefeeding and the situation cannot be changed. Also, obstetricians feel that the paediatricians ought to be responsible for giving feeding advice while paediatricians feel that the obstetricians ought to advocate breastfeeding before birth of babies. Thus, there is diverse opinion on breastfeeding.

Conclusion

In conclusion, the decision making processes of the medical professionals and the hospitals in recommending/

adopting infant formula are influenced somewhat by present marketing and promotional efforts of the infant formula companies. Although medical professionals with more knowledge about the product are likely to be more critical about information provided by the companies, most of them rarely have time to read medical journals and hence are relying on promotional literature and salesperson for information about new brands and/or improvements. Given that all humanized infant formula are more or less similar, a brand of infant formula supported by strong marketing and promotional efforts is likely to be accepted more readily by the medical professionals, since few medical professionals will feel comfortable about recommending brands that mothers have not heard of or which are not readily available in the market. Thus, marketing and promotional efforts of the infant formula companies do have some impact on the decision making processes of the medical professionals and hospitals.

CHAPTER VI

RECOMMENDATIONS TO THE INFANT FORMULA COMPANIES

Given that the marketing and promotional efforts of the infant formula companies do have some impact on the decision making processes of the medical professionals and hospitals, it appears that a logical approach for the infant formula companies to take will be to concentrate their marketing and promotional efforts on the medical professionals, particularly on the general practitioners and the nurses. The infant formula companies can take on a role as an information source for the medical professionals and the hospitals. The ultimate objective will be to get the hospitals to use the brands of formula. In addition to maintaining good delivery records, the companies can emphasize in their promotional literature their achievements in quality control, their wide distribution, past successes of the brand, and perhaps even quoting recognition by established authorities in the area.

A marketing approach suggested above is likely to result in short-term sales and profits increase. But an infant formula company taking on such an approach is really using a "selling" concept rather than a "marketing" concept. With the "selling" concept, a company will see its task as "to organize a strong sales-oriented department and use this strategy as the key to attracting and holding customers"[21].

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[21] Philip Kotler, Marketing Management. Analysis, Planning and Control, 4th ed. (New Jersey: Prentice-Hall, Inc., 1980), p. 30.

What will happen to a company that takes on such an approach? There are great risks in practicing the "selling" concept, especially in its hard-driving form where customer satisfaction is considered secondly to getting the sale. This practice will even spoil the market for the seller in that eventually there will be no customers who trust the company. With the increasing oppositions against bottle-feeding and the marketing and promotional efforts of the infant formula companies, it is likely that such a company will be accused of being "unethical" and socially irresponsible. In fact, a major implication of the findings is that it is now time for the infant formula companies to start de-marketing their products or take on a no-growth policy in such product line. As mentioned previously, de-marketing a product does not necessarily mean decline in sales and profits. In the short-run, sales and profits may be hurt and this may be taken as a kind of social costs. However, it may turn out in the end that this is better for the company, especially when people begin to see the company as socially responsible and learn to trust it. In adopting a "we care" leadership role, a company may be able to increase its market share and profits in the long-run. After-all, the marketing concept is "a management orientation that holds that the key task of the organization is to determine the needs and wants of target markets and to adapt the organization to delivering the desired satsifactions more effectively and efficiently than its competitors"[22]. To be socially responsible, a company must accomplish the above objective "in a way that preserves or enhance the consumers'

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[22] P. Kotler, Marketing Management. Analysis, Planning and Control, 4th ed. (New Jersey: Prentice-Hall, Inc., 1980), p. 31.

and society's well being"[23]. In other words, the company must see its task as serving its target markets in a way that produces not only want satisfaction but long-run individual and social benefits as the key to attracting and holding customers.

At this point in time, the issue on infant formula has already passed the problem identification stage. Public attention has been drawn to the matter and a remedy and relief stage has been entered, as evidenced by the intense amount of activity by the various parties to the conflicting issue. Hence, it appears that a future objective for an infant formula company will be to proceed to and reach a prevention stage, during which long range programs to prevent conflicts are developed. This will mean that the infant formula company will have to move from a social obligation phase to a social responsibility phase. In order to become a socially responsible and ethical company, an infant formula company must think ahead and consider its company image in the long-run. It must also realize that every child has a right to be adequately nourished and that it has the responsibility to ensure the effective enjoyment of this right so that children may develop to their full potential.

It is suggested that the company see itself as an active advocator of breastfeeding. The emphasis will be on the preservation of breastfeeding and the implementation of appropriate nutritional guidelines. From the industry's point of view, this idea may sound absurd. However, as we consider carefully the society around us and the changing

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[23] P. Kotler, Marketing Management. Analysis, Planning and Control, 4th ed. (New Jersey: Prentice-Hall, Inc., 1980), p. 35.

role of women, we can see that nowadays most women are working and it is likely that they will get only a 2-month maternal leave. In other words, the infant formula company will only be sacrificing its sales and profits for two months. After these two months, mothers will go back to work and start their babies on infant formula. It is at such point in time and beyond this that the infant formula company will want to get its business.

How does an infant formula company create and earn brand (company) loyalty in the first place? It is suggested that the infant formula company takes its ultimate objective as creating among the public and medical professionals the recognition that it is an ethical and honest company. The company can still concentrate its marketing and promotional efforts on the general practitioners and nurses but in addition, it must satisfy the paediatricians by providing them with detailed chemical compositional breakdowns of the infant formula. Promotion to medical professions should be restricted to factual and ethical information. The company must not only establish its own code (or conform to the international code) of marketing practices but must also adhere to such a code. In addition, exporting and importing agencies must also be requested to conform to the code.

At the same time, the infant formula company can re-position the product as a "weaning food", to be used when the mother goes back to work. However, marketing of such "weaning food" must be designed not to discourage breast-feeding. By doing so, the company can be regarded as ethical in the sense that it is actually advocating breast-feeding, at least for the maternal leave period. Afterall,

all existing infant formula company do have product lines other than infant formula and a no-growth policy in such a product line is unlikely to hurt the entire company's profits.

In terms of production and distribution, the products can be labelled to indicate proper and safe home preparations. The infant formula company may also want to be very careful about its marketing practices in the less developed countries. Actually, a conservative approach for the company will be to promote and sell its products in the developed countries only, where mothers are literate and the place hygiene enough to guarantee safe preparation and usage of the product. For product development, the company can concentrate on research and come up with follow-on (high protein)infant formula (for babies older than six months). This way the company will benefit from brand loyalty and capture the sales beyond the 6-month period.

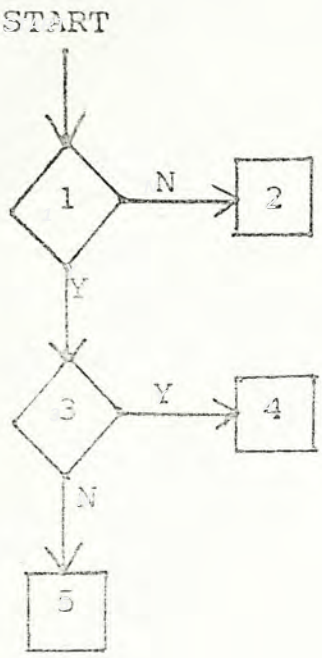
In terms of public education, an infant formula company can work with international health agencies and prepare educational materials not only for mothers but for other members of the family as well (e.g. the father). The objective of such an effort will be to aim at a better acceptance of breastfeeding as the natural and healthiest practice. Research efforts on infant feeding, nutrition, etc. can also be expanded so as to include health care and nutritional information for young children as well.

Finally, in anticipation of increasing rules and regulations against the industry's marketing and promotional activities by governmental authorities, it is suggested that infant formula companies start their de-marketing efforts as soon as possible. It takes t

image and re-position the product and in an industry as competitive as the infant formula industry, an early starter may get to lead ahead. Afterall, the saying that "The early bird catches the worm" may be true.

APPENDIX 1: FLOW DIAGRAMS SHOWING THE RECOMMENDATION/ADOPTION PROCESSES

FIGURE 5: DECISION MAKING PROCESS OF SUBJECT NO. 1



1. Does mother ask for a recommendation?
2. Do nothing.
3. Does the baby have special feeding problems?
4. Refer the case to the Paediatrician.
5. Give mother a list of the brands that the hospital has been using.

REMARKS:

Position: Medical Superintendent

No. of Years in Practice: 10 years

No. of years in Obstetric/Paediatric Unit: NIL

Role with respect to infant formula: Final decision maker in hosp. but acts upon recommendation of Head Nurse from Maternity Ward

Attitude towards breastfeeding: All mothers should breastfeed whenever possible

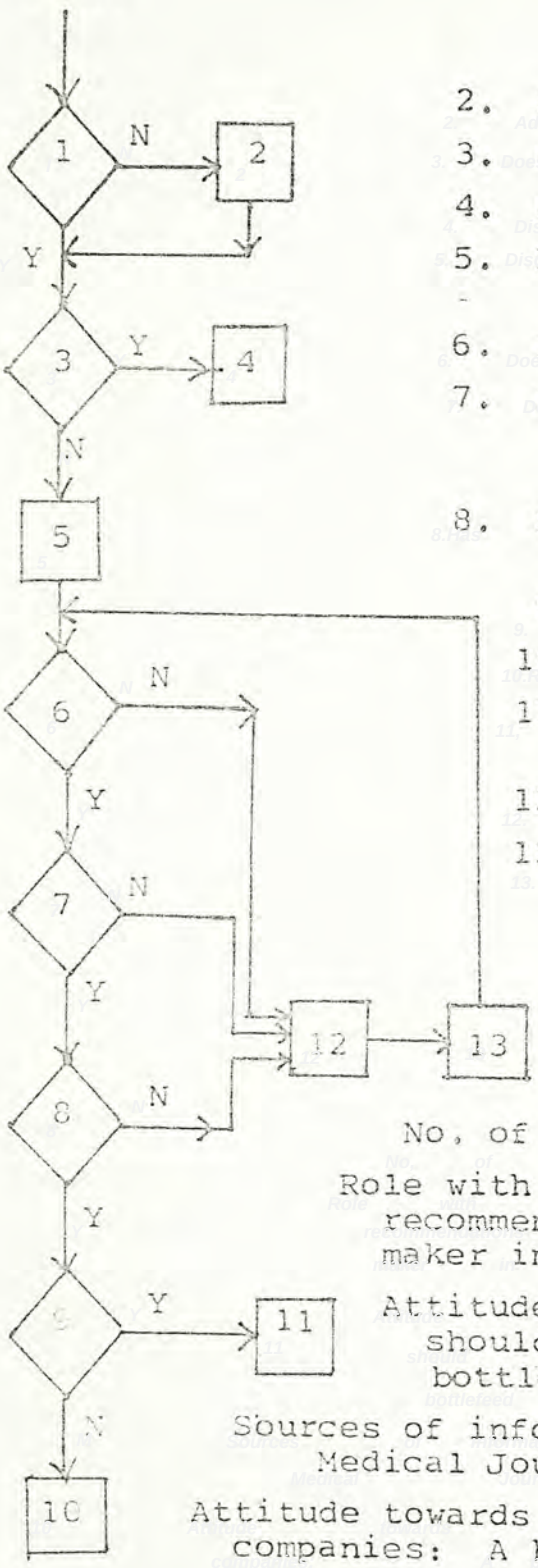
Sources of information (regarding infant formula):

Promotional literature published by infant formula companies

The subject does administrative work and rarely has contacts with mothers who come to the hospital.

Attitude towards present promotion of companies: Not against.

FIGURE 6: DECISION MAKING PROCESS OF SUBJECT NO. 2



1. Has mother already made up her mind about the feeding method?
2. Advocate breastfeeding.
3. Does mother prefer to breastfeed?
4. Discuss breastfeeding.
5. Discuss infant formula and consider a brand.
6. Does the brand have a low salt content?
7. Does the manufacturer of the brand have good quality control on its products?
8. Has this brand proven to be good in the past?
9. Is this a higher priced brand?
10. Recommend the brand.
11. Recommend the brand to be used after the baby is 1 month old.
12. Reject the brand.
13. Consider another brand.

REMARKS:

Position: Medical Superintendent

No. of years in practice: 15 years

No. of years in Obstetric/Paediatric Unit: 6 yrs.

Role with respect to infant formula: Making recommendations to mothers and final decision maker in hospital's adoption of formula.

Attitude towards breastfeeding: All mothers should be encouraged to breastfeed and bottlefeed only when special problems arise.

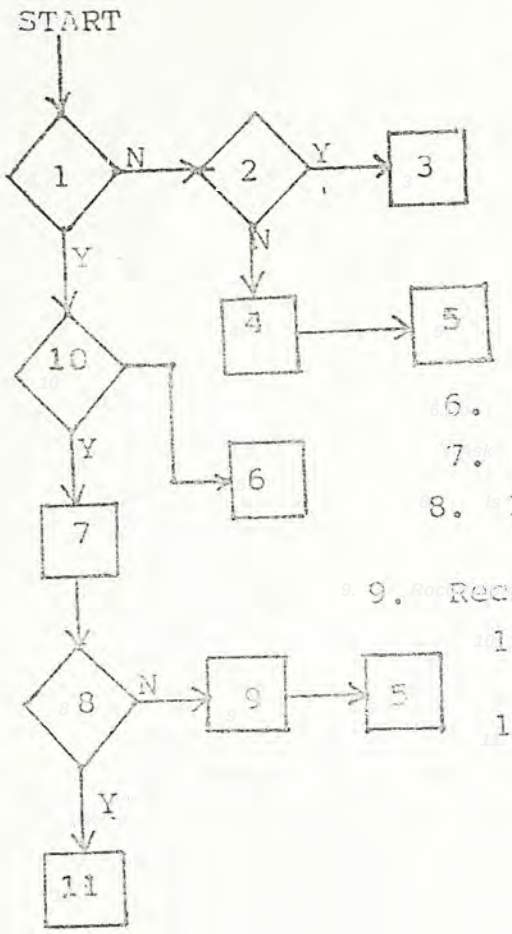
Sources of information concerning infant formula: Medical Journals

Attitude towards present promotional efforts of companies: A bit too much.

The subject is a doctor himself and therefore does have some contacts with mothers who come to the hospital.

The subject feels that if mothers want to switch to higher priced brands, they can do so after babies are 2 months old. Otherwise, he does not recommend higher priced brands.

FIGURE 7 : DECISION MAKING PROCESS OF SUBJECT NO. 3



1. Is this ante-natal?
2. Is the baby doing well on present formula?
3. Recommend continual usage of that brand.
4. Recommend switching to another acceptable brand.
5. Give out samples of the recommended brand if handy.
6. Do nothing.
7. Ask mother her preferred brand.
8. Is the preferred brand one of the popular brands?
9. Recommend a more popular brand.
10. Does mother ask for a brand recommendation?
11. Tell mother that the brand is okay.

REMARKS:

Position: Medical Superintendent

No. of years in practice: 17 years

No. of years in Obstetric/Paediatric Unit: 1 year

Role with respect to infant formula: Making recommendations to mothers, sometimes subject to mothers' preferences.

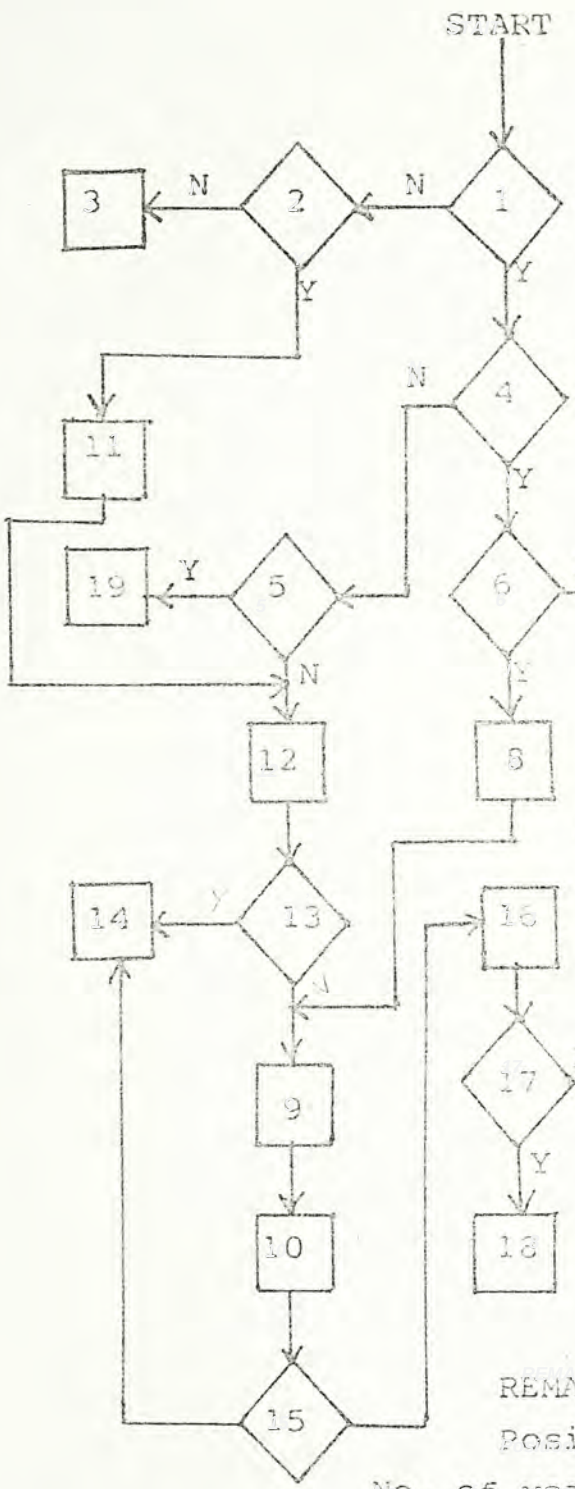
Attitude towards breastfeeding: Bottlefeeding with humanized infant formula is as good as breastfeeding.

Sources of information concerning infant formula: Promotional literature published by companies.

Attitude towards promotion of companies: Not against.

The subject is at the same time a private practioner (family doctor) and therefore has some contacts with mothers.

FIGURE 8 : DECISION MAKING PROCESS OF SUBJECT NO. 4



1. Does mother ask for feeding advice?
2. Do I feel good today?
3. Do nothing.
4. Does mother specifically ask about a brand?
5. Does the baby have special feeding problems?
6. Does the brand satsify all basic nutritional requirements?
7. Advise against its use.
8. Give answer: all brands are equally good.
9. Ask mother why she does not prefer breastfeeding.
10. Tell mother the benefits of breastfeeding.
11. Take initiative to talk about breastfeeding.
12. Ask about preferred way of feeding.
13. Does mother prefer breastfeeding?
14. Give advice on breastfeeding.
15. Does mother show a willingness to breastfeed?
16. No brand recommendation.
17. Does mother insist for a brand name?
18. Tell mother the brand used in the hospital.
19. Refer case to paediatrician.

REMARKS:

Position: Medical Officer (Obstetrics)

No. of years in practice: 1 year

No. of years in Obstetric/Paediatric Unit: 1 year

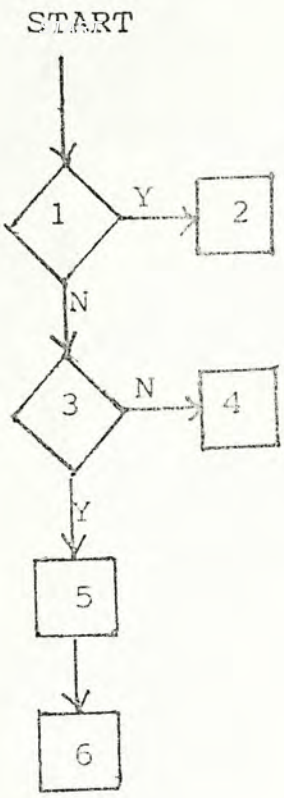
Role with respect to infant formula: Advisor to mother (during ante-natal period or when baby is sick) with regard to precaution in artificial feeding.

Attitude towards breastfeeding: All mothers should breastfeed whenever possible.

Sources of information regarding infant formula: Medical journals.

Attitude towards present promotion companies: Not against.

FIGURE 9 : DECISION MAKING PROCESS OF SUBJECT NO. 5



1. Does the baby have special feeding problems?
2. Recommend brand according to the individual case.
3. Does mother ask for a brand recommendation?
4. Do nothing.
5. Response: all humanized formula are equally good.
6. Give the brand name that the baby is fed on during hospitalization.

REMARKS:

Position: Paediatrician

No. of years in practice: N.A.*

No. of years in Obstetric/Paediatric Unit: N.A.

Role with respect to infant formula: Advisor to mother (post-natal) when baby is sick. Also advisor to hospital regarding what brands to use for the hospital's nursery.

Attitude towards breastfeeding: All mothers should breastfeed whenever possible but mothers who come to the hospital cannot be pushed (because they already have preconceived ideas on bottlefeeding).

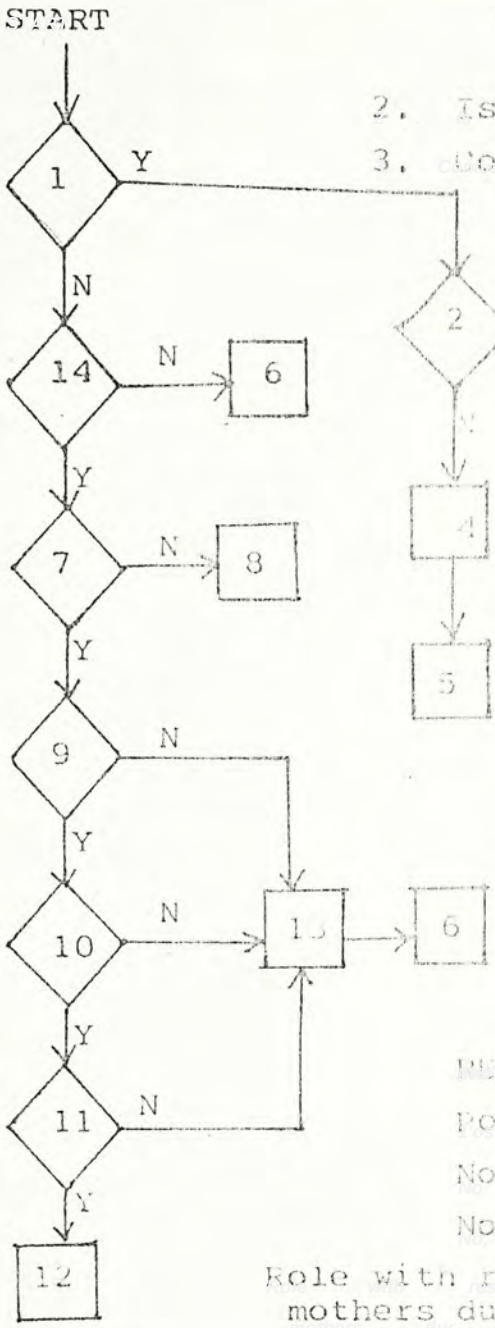
Sources of information concerning infant formula: Medical journals.

Attitude towards present promotion of companies: not against.

The subject rarely has direct contact with mothers (in his present position) except when baby is sick or have special problems.

*N.A. - Not Available

FIGURE 10: DECISION MAKING PROCESS OF SUBJECT NO. 6



1. Is baby already on a particular brand of infant formula?
2. Is baby doing well on the brand?
3. Continue to use the brand.
4. Consider health condition of the baby.
5. Recommend an appropriate brand.
6. Recommend one or two brands that are on my "acceptable" list.
7. Do I know of the brand?
8. Reply: Not sure about the brand.
9. Does this brand satisfy the basic nutritional (compositional) requirements?
10. Does the manufacturer of the brand have a good image?
11. Does the brand have a good "performance" record?
12. Reply: the brand is okay to use.
13. Advise against its use.
14. Does mother have a specific brand preference?

REMARKS:

Position: Paediatrician (Consultant)

No. of years in practice: 10 years

No. of years in Obstetric/Paediatric Unit: N.A.

Role with respect to infant formula: Advisor to mothers during consultation and advisor to hospital concerning what brands of formula to use.

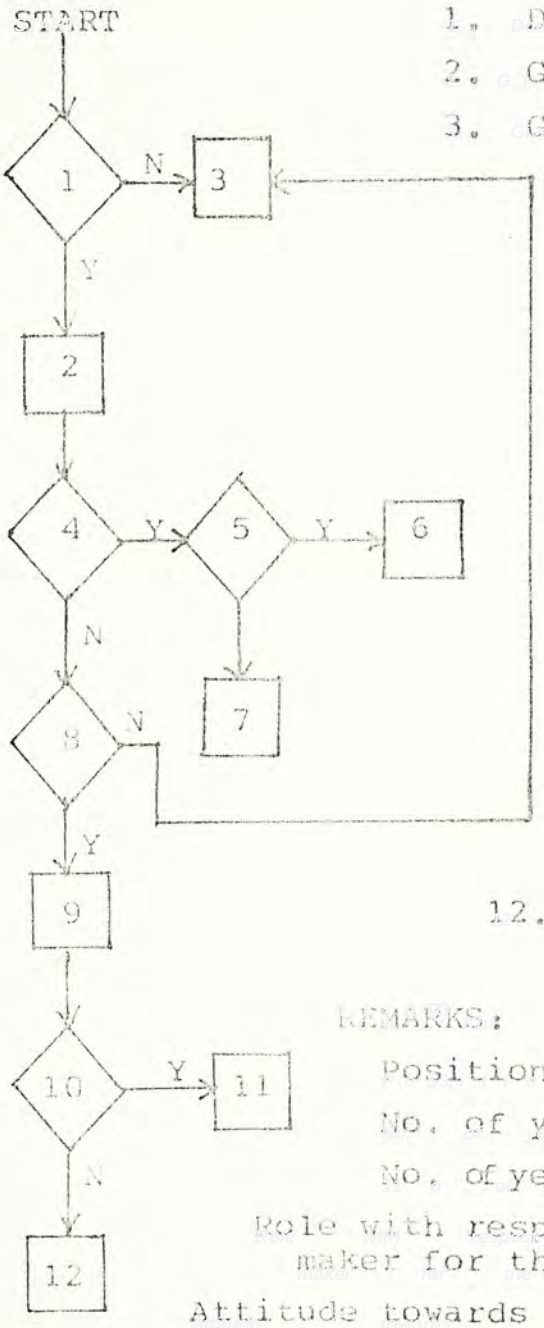
Attitude towards breastfeeding: All mothers should breastfeed whenever possible but it is up to the mothers to decide.

Sources of information concerning infant formula: Promotional literature and medical journals.

Attitude towards present promotion of companies: not against.

The subject has direct contacts with mothers mostly during the post-natal period.

FIGURE 11 : DECISION MAKING PROCESS OF SUBJECT NO. 7



1. Does mother need feeding advice?
2. Give mother feeding instructions.
3. Give mother the name of the brand that baby is fed on when in hospital.
4. Does mother specifically ask about a brand?
5. Is the brand one of the humanized infant formulas?
6. Reply: The brand is okay.
7. Advise against the brand.
8. Does mother want a brand recommendation?
9. Reply: All humanized infant formula are equally good.
10. Does mother insist for a brand recommendation?
11. Recommend the cheapest brand in the humanized infant formula category.
12. Leave decision to mother.

REMARKS:

Position: Paediatrician (Consultant)

No. of years in practice: N.A.

No. of years in Paediatric Unit: N.A.

Role with respect to infant formula: Decision maker for the brands used by the hospital.

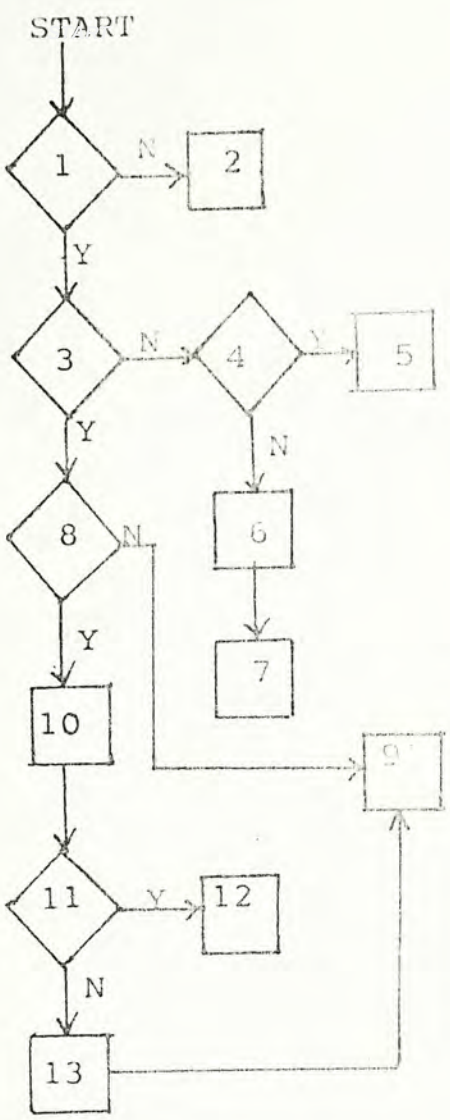
Attitude towards breastfeeding: All mothers should breastfeed whenever possible and should bottlefeed only when mother has to work. There is need in Hong Kong for more education of expectant mothers regarding the advantages of breastfeeding.

Sources of information concerning infant formula: Medical journals and official British Government publications.

Attitude towards present promotion of companies: A bit pushy.

The subject rarely has direct contacts with mothers. If there is contact, it is mostly during the post-natal period.

FIGURE 12: DECISION MAKING PROCESS OF SUBJECT NO. 8



1. Does mother ask for a brand recommendation?
2. Do nothing.
3. Is this ante-natal?
4. Is baby doing well on present formula?
5. Continue to use the brand.
6. Consider health condition of the baby.
7. Recommend an appropriate brand.
8. Does mother specifically ask about a brand?
9. Recommend best brand from my research results.
10. Check with my research results.
11. Is the brand on my "acceptable" list?
12. Reply: The brand is okay.
13. Advise against the brand.

REMARKS:

Position: Medical Director

No. of years in practice: N.A.

No. of years in Obstetric/Paediatric: N.A.

Role with respect to infant formula: Decision maker for the brands to be used in the hospital.

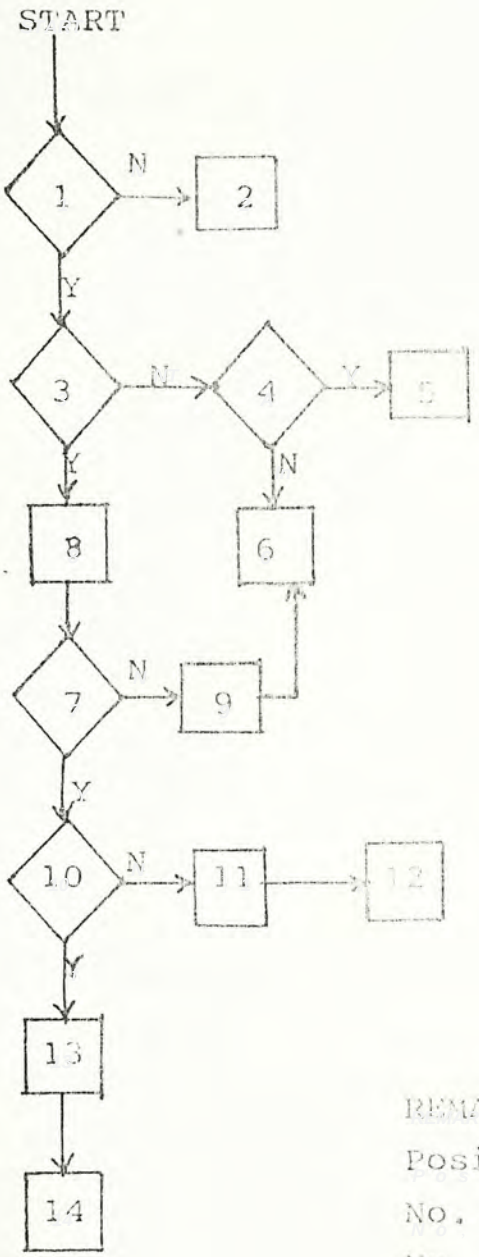
Attitude towards breastfeeding: All mothers should be encouraged to breastfeed but one should not push too hard.

Sources of information concerning infant formula: Own research results and sometimes promotional literature.

Attitude towards present promotion of companies: No need to promote as doctors know which brands are good.

The subject in most cases will not have direct contacts with the mothers.

FIGURE 13 : DECISION MAKING PROCESS OF SUBJECT NO. 9



1. Does mother ask for a brand recommendation?
2. Do nothing.
3. Is this ante-natal?
4. Is baby doing well on present brand?
5. Continue to use the brand.
6. Recommend appropriate brand.
7. Does mother specifically ask about a brand?
8. Advocate breastfeeding (at least during maternal leave).
9. Consider individual case.
10. Does the brand have satisfactory quality?
11. Reject the brand.
12. Give mother a list of good quality brands to choose from.
13. Reply: The brand is okay.
14. Tell mother about possible problems associated with the brand.

REMARKS:

Position: Paediatrician (post-natal)

No. of years in practice: 8 years

No. of years in Paediatric unit: 8 years

Role with respect to infant formula: Advisor to mothers during post-natal period and advisor to hospital concerning the brands to be used in the hospital.

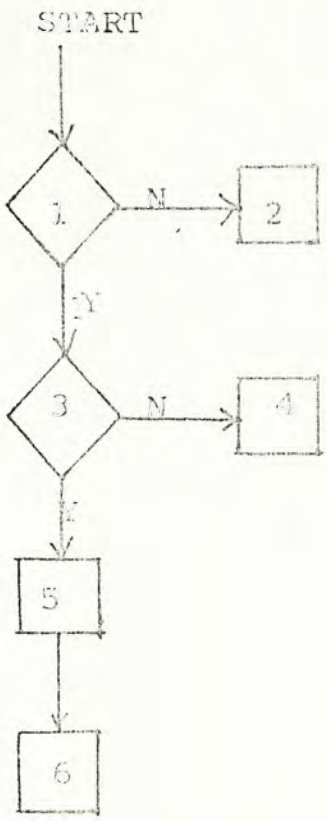
Attitude towards breastfeeding: All mother should breastfeed whenever possible, especially for the first two months.

Sources of information concerning infant formula: Own experience and promotional literature.

Attitude towards promotion of companies: Don't like to promote products for the companies.

The subject has some direct contacts with mothers, usually when a baby is sick.

FIGURE 14 : DECISION MAKING PROCESS OF SUBJECT NO. 10



1. Does mother ask for a brand recommendation?
2. Do nothing.
3. Is this ante-natal?
4. Tell mother the brand that baby is fed on when in hospital.
5. Tell mother the hospital's policy on infant formula.
6. No brand recommendation given.

REMARKS:

Position: Head Nurse - Maternity Ward

No. of years in practice: 11 years

No. of years in Obstetric/Paediatric Unit: 11 years

Role with respect to infant formula: Real decision maker in the hospital concerning what brands of formula to use (although the administrator will be the person to say yes or no).

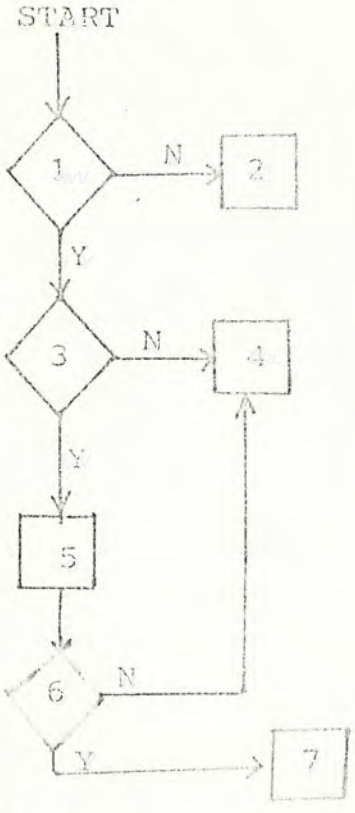
Attitude towards breastfeeding: Bottlefeeding with humanized milk is as good as breastfeeding and it is up to the mother to decide.

Sources of information concerning infant formula: the milk nurses

Attitude towards present promotion of companies: Not against.

The subject has direct contacts with mothers both during ante-natal and post-natal periods.

FIGURE 15 : DECISION MAKING PROCESS OF SUBJECT NO. 11



1. Does mother ask for a brand recommendation?
2. Do nothing.
3. Is this ante-natal?
4. Give mother a list of brands (same list as that used by hospital).
5. Advocate breastfeeding.
6. Does mother prefer breastfeeding?
7. Give advice on breastfeeding.

REMARKS:

Position: Nursing Sister - Maternity Department

No. of years in practice: 20 years

No. of years in Obstetric/Paediatric Unit: 1 year

Role with respect to infant formula: Advisor to mothers when consulted.

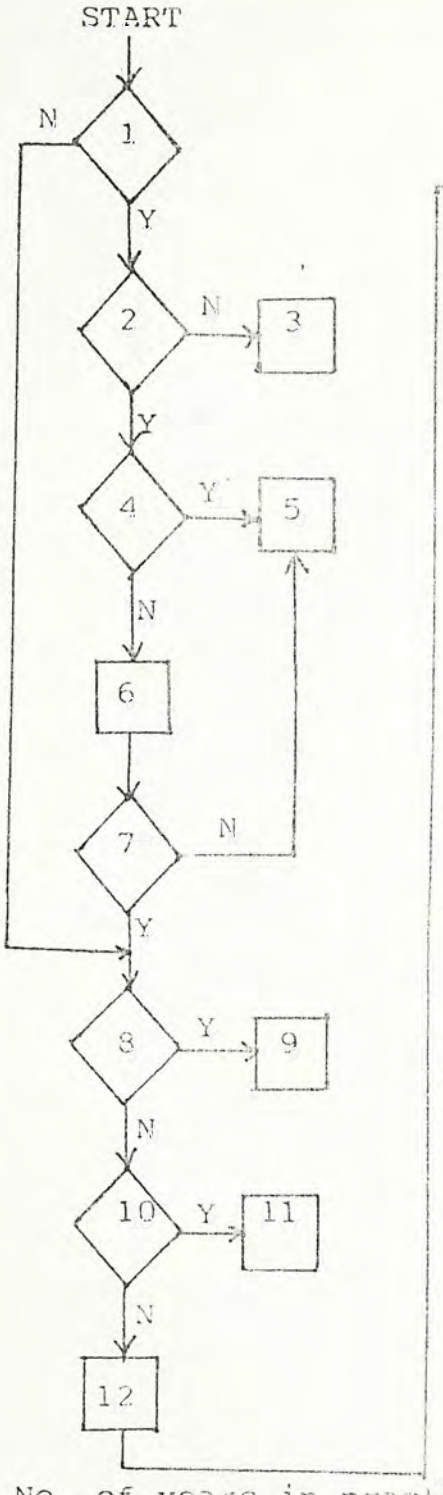
Attitude towards breastfeeding: All mothers should breastfeed whenever possible but bottlefeeding with humanized infant formula is as good.

Sources of information concerning infant formula: Promotional literature published by companies.

Attitude towards present promotion of companies: Not against.

The subject is involved mainly in administrative work and does not have much direct contacts with mothers.

FIGURE 16: DECISION MAKING PROCESS OF SUBJECT NO. 12

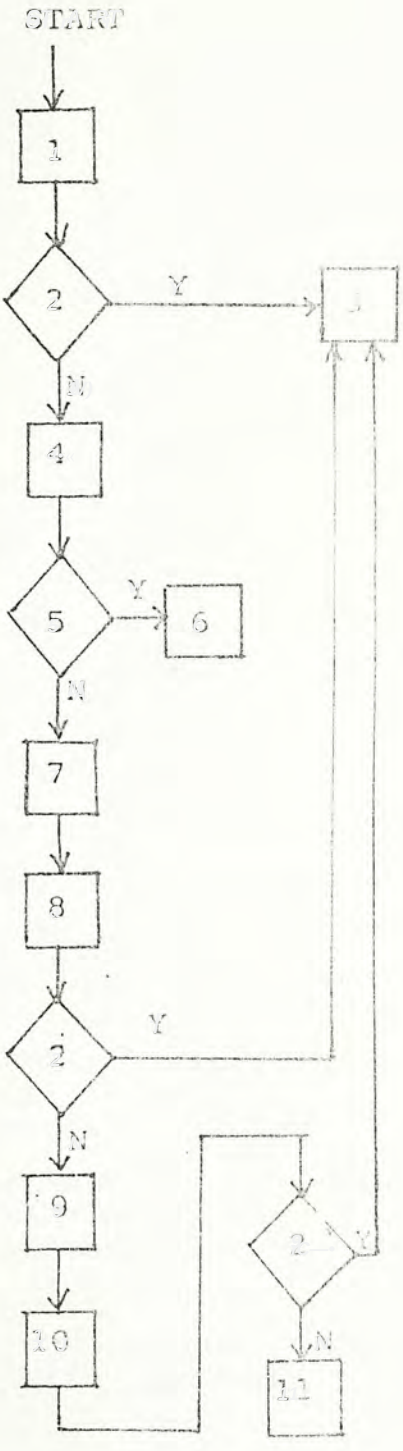


1. Is this ante-natal?
2. Does mother ask for feeding advice?
3. Take initiative to talk about breastfeeding.
4. Does mother prefer breastfeeding?
5. Give advice on breastfeeding.
6. Encourage breastfeeding.
7. Does mother still want to bottlefeed?
8. Is motner attended by a doctor in the hospital?
9. Give brand preference of the doctor.
10. Will mother be travelling?
11. Recommend a brand that is easily available.
12. Consider age of baby.
13. Ask about brand that baby is on.
14. Is baby doing well on present brand?
15. Continue to use the brand.
16. Consider a brand.
17. Is composition of this brand appropriate for a baby of this age?
18. Is the formula easy to prepare?
19. Has this brand done well in the past?
20. Recommend the brand.
21. Consider another brand.

REMARKS:

Position: Nursing sister
No. of years in practice: 23 years
No. of years in Obstetric/Paediatric Unit: 21 years (on and off)
Role with respect to infant formula: Advisor to mothers during consultation and sometimes give advice on doctors' instructions.
Attitude towards breastfeeding: All mother should be encouraged to breastfeed whenever possible.
Sources of information concerning formula: Promotional literature, own experience, word-of-mouth, medical journals.
Attitude towards present promotion of companies: Too much.
The subject has contacts with mother during both antenatal & postnatal period.

FIGURE 17: DECISION MAKING PROCESS OF SUBJECT NO. 13



1. Ask mother the brand that baby is on.
2. Is baby doing well on present formula?
3. Continue to use the brand.
4. Recommend baby switching to another brand.
5. Does the doctor recommend a brand for this baby?
6. Use the recommended brand.
7. Consider baby's condition.
8. Switch to some other popular brand.
9. Ask opinion from other nurses.
10. Try other brands of humanized formula.
11. Consult doctor for special formula.

REMARKS:

Position: Nursing sister (nursery)

No. of years in practice: 12 years

No. of years in Obstetric/Paed. Unit: 4 yrs

Role with respect to infant formula: Advisor to mothers when consulted.

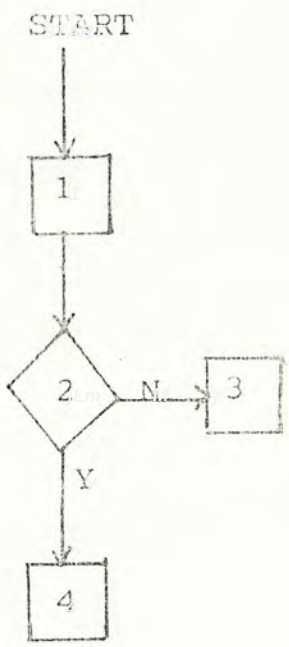
Attitude towards breastfeeding: All mothers should breastfeed whenever possible.

Sources of information concerning infant formula: Promotional material.

Attitude towards present promotion of companies: Not against.

The subject usually has direct contacts with mothers when babies are brought to the nursery.

FIGURE 18: DECISION MAKING PROCESS OF SUBJECT NO. 14



1. Take initiative to talk about feeding.
2. Does mother want a brand recommendation?
3. Do nothing.
4. Refer mother to doctor.

REMARKS:

Position: Director of nursing

No. of years in practice: 29 years

No. of years in Obstetric/Paediatric Unit: 15 years

Role with respect to infant formula: Not really related, mainly involved in administrative work.

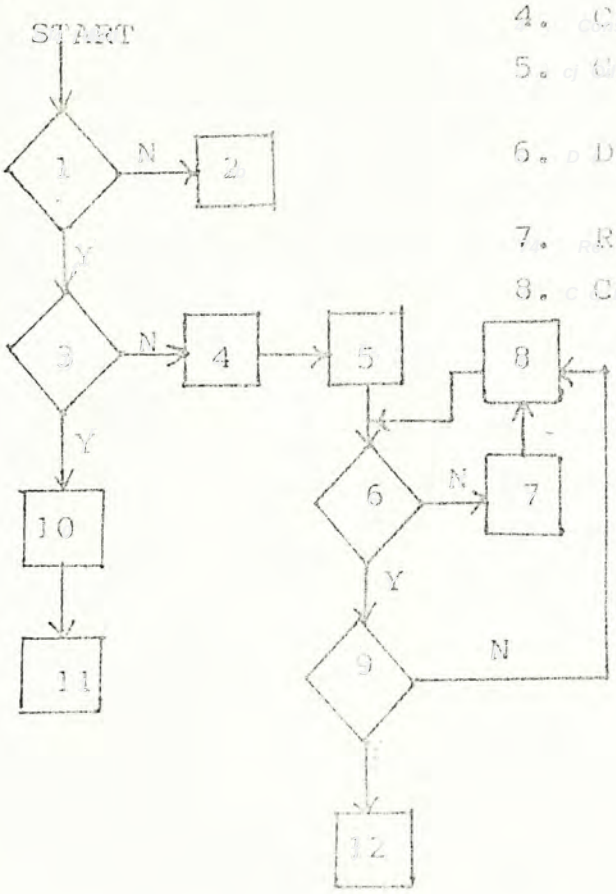
Attitude towards breastfeeding: Bottlefeeding can be very satisfactory but breastfeeding is ideal and should be encouraged.

Sources of information concerning infant formula: Promotional literature, mail from infant formula companies, and word-of-mouth from my colleagues.

Attitude towards present promotion of companies: Too pushy.

The subject does not usually have contacts with mothers except during ante-natal classes.

FIGURE 19: DECISION MAKING PROCESS OF SUBJECT NO. 15



1. Does mother ask for a brand recommendation?
2. Do nothing.
3. Is mother delivering (or is baby delivered) in this hospital?
4. Consider condition of baby.
5. Consider a brand that has a well-established market.
6. Did babies do well on this brand from my past experience?
7. Reject brand.
8. Consider another brand.
9. Is this a widely accepted brand?
10. Tell mother the hospital's policy on formula.
11. Give mother one tin of the brand that baby is fed on (or will be fed on).
12. Recommend the brand.

REMARKS:

Position: Head Nurse, nursery

No. of years in practice: 13 years

No. of years in Obstetric/Paediatric Unit: 13 years

Role with respect to infant formula: Give weekly report on formula being used to the hospital.

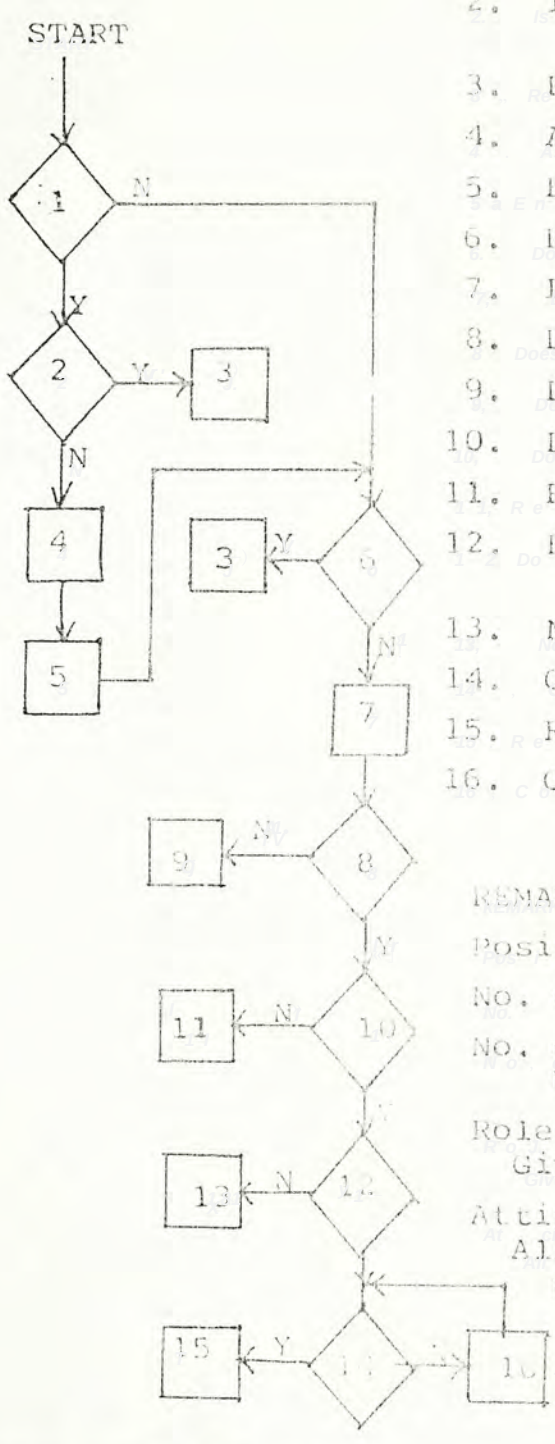
Attitude towards breastfeeding: Encourage breastfeeding for 1 month but bottlefeeding is more convenient.

Sources of information concerning infant formula: Own experience (from reactions of babies).

Attitude towards present promotion of companies: Not against.

The subject has contacts with mother during both antenatal and post-natal periods.

FIGURE 20: DECISION MAKING PROCESS OF SUBJECT NO. 16



1. Is this ante-natal?
2. Is mother attended by a doctor in the hospital?
3. Refer case to doctor.
4. Ask mother feeding method preferred.
5. Encourage breastfeeding for 3 months.
6. Does mother prefer breastfeeding?
7. Let mother choose her own brand.
8. Does mother want my personal opinion?
9. Do nothing.
10. Does the baby have special problems?
11. Recommend appropriate formula.
12. Do I know of any brands that are good from my past experience?
13. No recommendation given.
14. Can mother afford the brand?
15. Recommend the brand.
16. Consider another brand.

REMARKS:

Position: Matron

No. of years in practice: -

No. of years in Obstetric/Paediatric Unit: 20 years

Role with respect to infant formula: Give opinion to doctors when asked for.

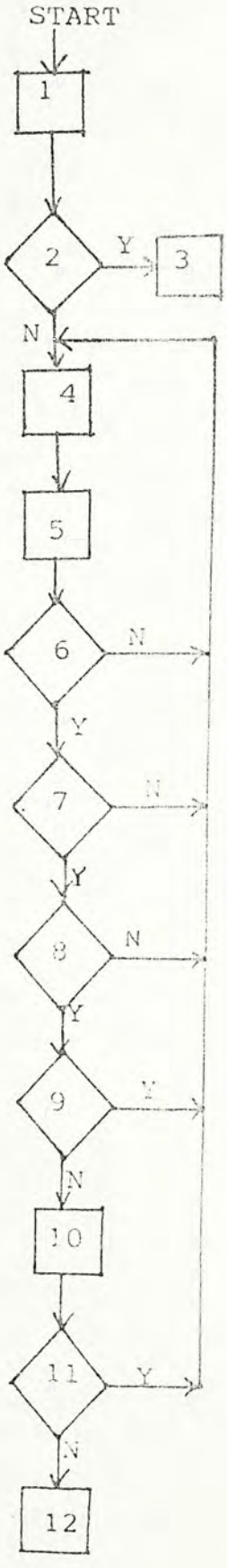
Attitude towards breastfeeding: All mothers should breastfeed whenever possible and bottlefeed only when restricted by mother's health or when mother is working.

Sources of information concerning infant formula: Own experience.

Attitude towards present promotion of companies: Not against.

The subject has contacts with mothers usually after babies are born (post-natal).

FIGURE 21 : ADOPTION PROCESS OF HOSPITAL NO. 1



1. Consider hospital's present policy.
2. Are we satisfied with the present brands?
3. Do nothing.
4. Drop the unsatisfactory brand.
5. Consider another brand as a replacement.
6. Does this brand satisfy all basic nutritional (compositional) requirements?
7. Does the manufacture have good quality control over the brand?
8. Is the brand readily available in the market?
9. Is the brand too expensive for the mothers who come to this hospital?
10. Trial use.
11. Are there any complaints about the brand from the medical staff?
12. Adopt the brand for hospital use.

REMARKS:

Policy: 3 months' rotation, a maximum of 6 brands in one cycle, supplied by compnnies.

Policy regarding breastfeeding: no stated policy to advocate bieastfeeding.

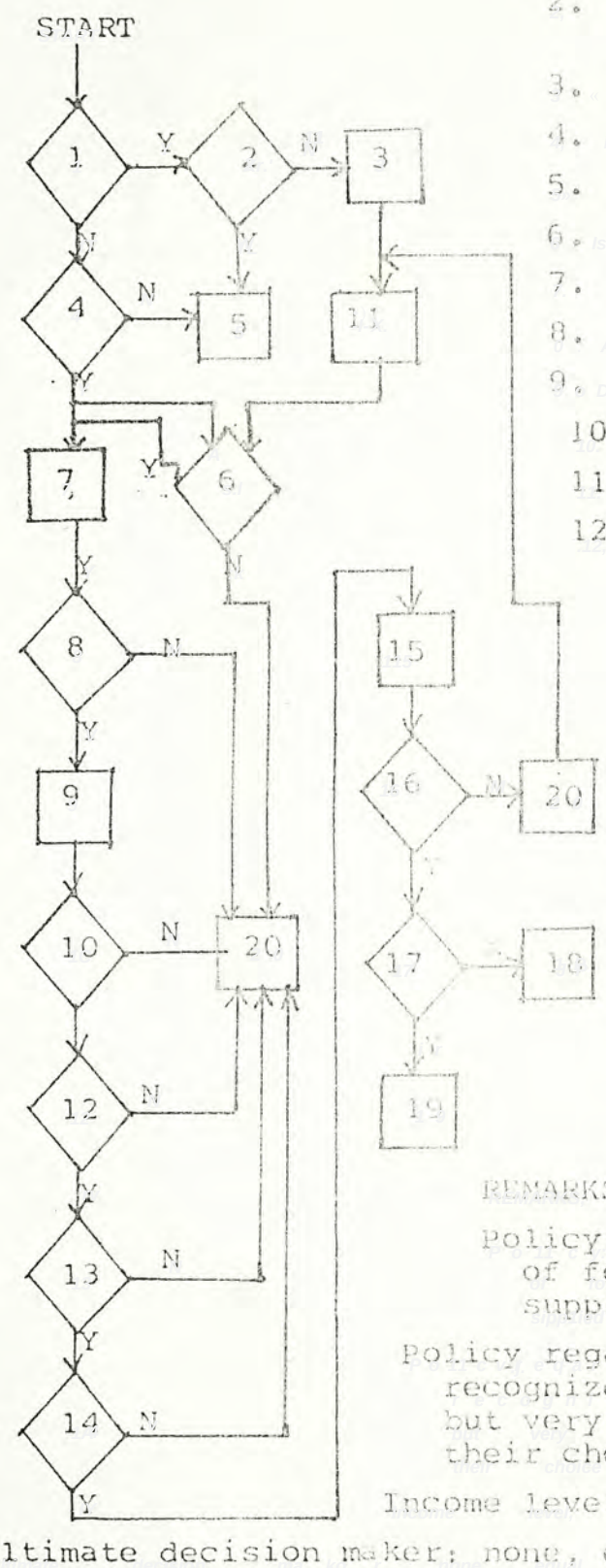
Income level of mothers: middle

Ultimate decision maker: administrator, but upon advice from head nurse and paediatrician. (Head nurse has more influence).

Size of hospital: Less than 20 beds in Maternity Ward.

This is a private hospital.

FIGURE 22 : ADOPTION PROCESS OF HOSPITAL NO. 2



1. Is this time for annual review?
2. Are we satisfied with present brands?
3. Find a replacement.
4. Has a brand asked to be considered?
5. Do nothing.
6. Is the brand close to human milk?
7. Send formula to be tested.
8. Are the test results satisfactory?
9. Discuss the brand.
10. Is the brand known to be good?
11. Consider another brand.
12. Is the brand easily available in market?
13. Is it economical for the mother?
14. Will this brand be prompt in delivery?
15. Trial use.
16. Are we satisfied with this brand?
17. Do we have a vacancy at this moment?
18. Hold for future vacancy.
19. Adopt the brand.
20. Reject the brand.

REMARKS:

Policy: 2 months' rotation, no fixed no. of formula to use but at about 7-8 brands, supplied by companies.

Policy regarding breastfeeding: The hospital recognizes that breastfeeding is best but very much leaves the mothers alone in their choice of feeding method.

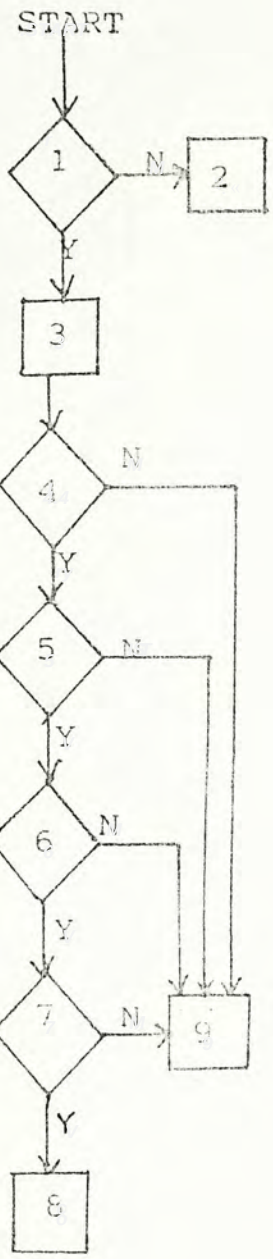
Income level of mothers: Middle

Ultimate decision maker: none, equal participation by administrator, Obstetrician, Paediatrician, and Head Nurse.

Size of hospital: About 100 beds in Maternity Ward.

This is a Government-subsidized hospital.

FIGURE 23 : ADOPTION PROCESS OF HOSPITAL NO. 3



1. Does a brand asked to be considered?
2. Do nothing.
3. Consider the hospital's policy.
4. Does the brand have a low salt content?
5. Does the manufacturer of the brand have good quality control?
6. Has this brand been recognized as "good" by medical authorities?
7. Is this new brand significantly better than the one we have been using?
8. Trial use and consider adoption.
9. Reject the brand.

REMARKS:

Policy: Let mothers choose but try to standardize on one brand, bought by hosp.

Policy regarding breastfeeding: The hospital actively advocates breastfeeding.

Income level of mothers: upper

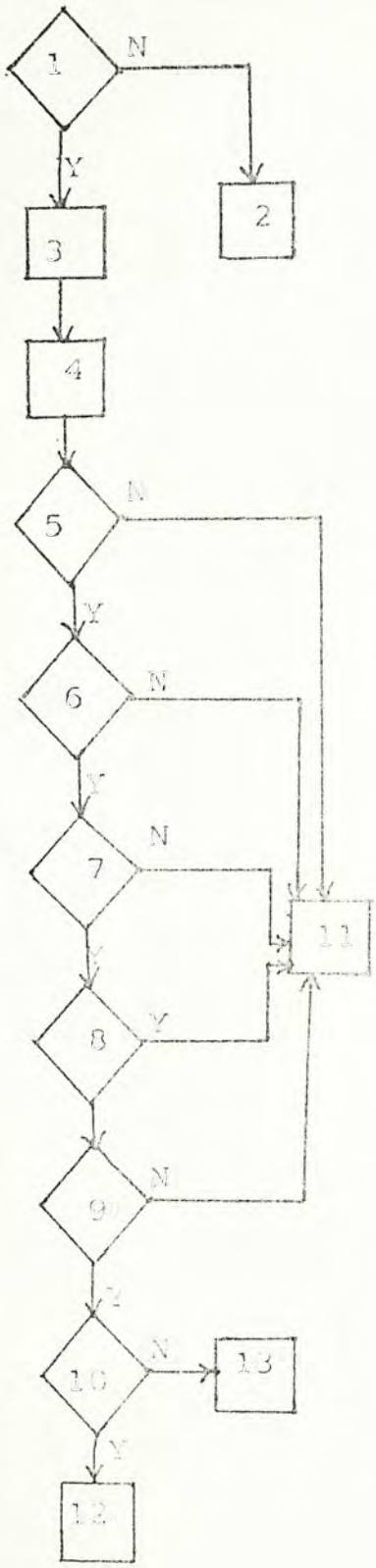
Ultimate decision maker: administrator.

Size of hospital: Less than 20 beds in Maternity Ward (Will double soon).

This is a private hospital.

The hospital administrator is the decision maker but decision is made only after informal discussion with other Paediatricians, Obstetricians, and nurses of the Maternity Ward.

FIGURE 24: ADOPTION PROCESS OF HOSPITAL NO. 4



1. Does a brand asked to be considered?
2. Do nothing.
3. Consider hospital's policy.
4. Consider the brand.
5. Does the brand satisfy basic compositional requirements?
6. Is the brand of formula safe?
7. Does the manufacturer have good quality control over the brand?
8. Have there been continuous problems with the brand?
9. Is this a cheaper priced brand?
10. Is this brand significantly better than the one we have been using?
11. Reject the brand.
12. Consider switching to this brand or put it on trial.
13. Continue to use the present brand.

REMARKS:

Policy: Standardized on one brand, supplied by manufacturer.

Policy regarding breastfeeding: Recognizes that breastfeeding is best but very much leave the mothers alone.

Income level of mothers: Lower

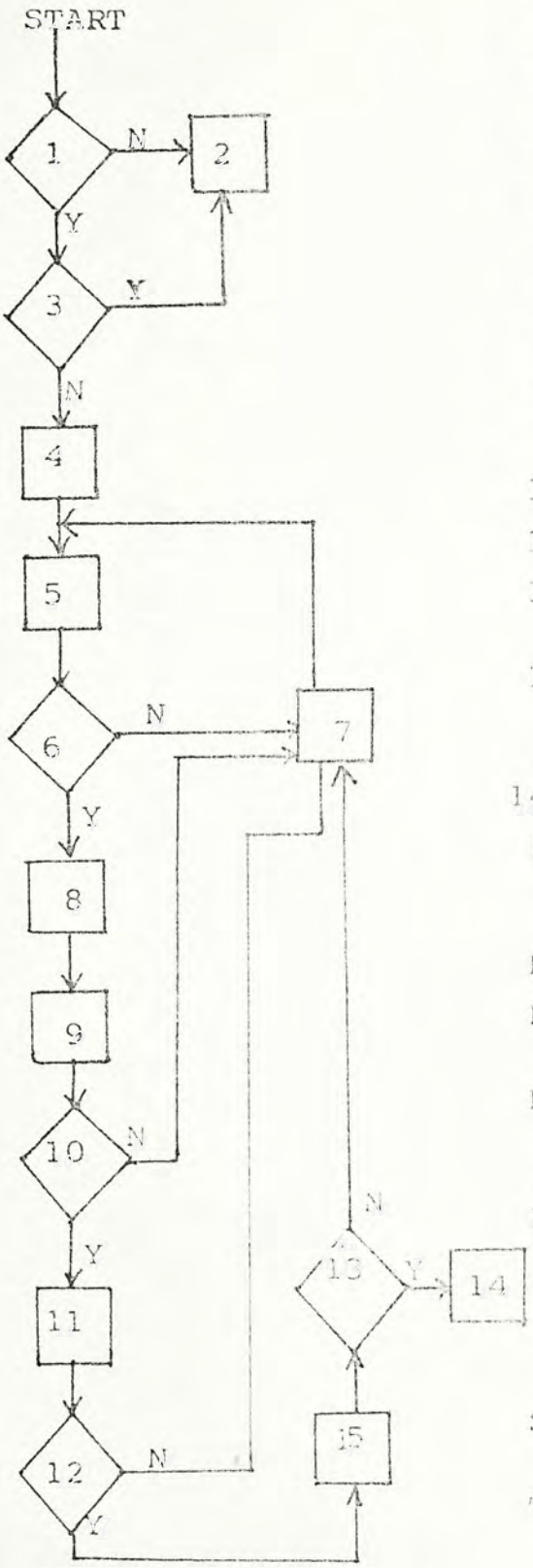
Ultimate decision maker: Consultant paediatrician.

Size of hospital: 200 beds in Maternity Ward.

This is a Government hospital.

The decision maker, seeing that most brands are really similar and that there are a few acceptable ones, has resolved to choosing based on the country of origin of the brands.

FIGURE 25: ADOPTION PROCESS OF HOSPITAL NO. 5



1. Is this time for annual review?
2. Continue to use present brands.
3. Are we satisfied with present brands?
4. Find a replacement.
5. Consider a brand and read its promotional literature.
6. Is this a humanized infant formula?
7. Reject the brand.
8. Trial use.
9. Compile report on trial use.
10. Are we satisfied with this brand?
11. Put brand on acceptable list.
12. Is the brand easily available in market?
13. Does this brand have the best results as compared to that of other brands?
14. Adopt the brand for hospital's use.
15. Compare the test results with that of the other brands.

REMARKS:

Policy: Rotation (2 Months), 6 brands, supplied by companies.

Policy regarding breastfeeding: Recognizes that breastfeeding is best but leaves choice up to mothers.

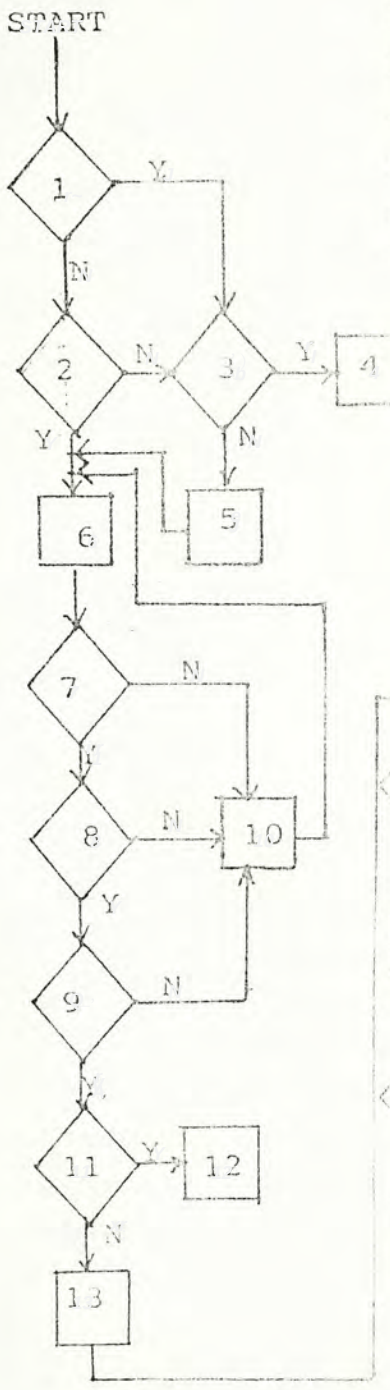
Income level of mothers: Middle & Lower

Ultimate decision maker: Medical Director with some opinion from Paediatrician and Head Nurse. (Administrator also participates).

Size of hospital: 30 beds in Maternity Ward.

This is a private hospital.

FIGURE 26 : ADOPTION PROCESS OF HOSPITAL NO. 6



1. Is it time for annual review?
2. Has a brand asked to be considered?
3. Are we satisfied with the present brands?
4. Continue to use the brands.
5. Drop the unsatisfactory brand.
6. Consider the (another) brand.
7. Does the brand have good quality (in terms of composition)?
8. Is the brand easily available in the market?
9. Is this a cheaper brand?
10. Reject the brand.
11. Does this brand have follow-on products under the same name?
12. Consider this as an additional good point for the brand.
13. Continue evaluation of brand.
14. Do we have a slot (vacancy)?
15. Trial use (2 months).
16. Is the result satisfactory?
17. Adopt the brand for hospital's use
18. Wait for vacancy.

REMARKS:

Policy: 8 brands used simultaneously, supplied by companies.

Policy regarding breastfeeding: No stated policy for advocation of breastfeeding.

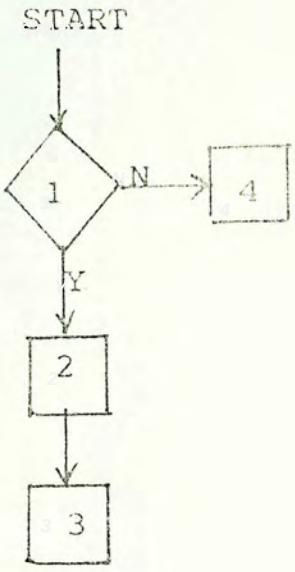
Income level of mothers: lower

Ultimate decision maker: none, equal participation from administrator, Paediatricians, and Head Nurse.

Size of hospital: Over 200 beds in Maternity Ward.

This is a Government-subsidized hospital.

FIGURE 27.: ADOPTION PROCESS OF HOSPITAL NO. 7



1. Does a brand asked to be considered?
2. Consider hospital's policy.
3. Tell salesperson that the hospital leaves the choice of brands to the mothers.
4. Do nothing.

REMARKS:

Policy: Let mothers choose, stock all common brands and obtain whatever brands (if necessary) from companies (free), special formulas, if required, are bought from companies.

Policy regarding breastfeeding: Recognizes that breastfeeding is best but leaves choice to mothers.

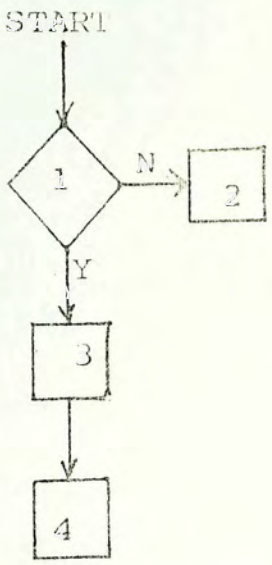
Income level of mothers: middle (sometimes upper)

Ultimate decision maker: the mothers.

Size of hospital: 6 beds in Maternity Ward.

This is a private hospital.

FIGURE 28: ADOPTION PROCESS OF HOSPITAL NO. 8



1. Does a brand asked to be considered?
2. Do nothing.
3. Consider hospital's policy.
4. Tell salesperson that the hospital leaves the choice to mothers.

REMARKS:

Policy: Let mothers choose, stock all common brands, obtain brands from supplier if necessary.

Policy regarding breastfeeding: The hospital actively advocates breastfeeding.

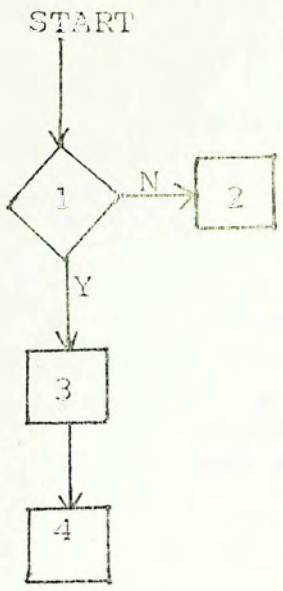
Income level of mothers: Upper and middle

Ultimate decision maker: The mothers (upon advice of doctors).

Size of hospital: Less than 20 beds in Maternity Ward.

This is a private hospital.

FIGURE 29 : ADOPTION PROCESS OF HOSPITAL NO. 9



1. Does a brand asked to be considered?
2. Do nothing.
3. Consider hospital's policy.
4. Tell salesperson that the hospital leaves choice to mothers.

REMARKS:

Policy: Let mothers choose, stock all common brands (free supply) obtain necessary brands from companies.

Policy regarding breastfeeding: Recognizes that breastfeeding is best but it is up to the mothers to choose.

Income level of mothers: varies.

Ultimate decision maker: The mothers.

Size of hospital: 30 beds in Maternity Ward.

This is a private hospital.

APPENDIX 2 : SAMPLE OF THE FOLLOW-UP QUESTIONNAIRE

THE CHINESE UNIVERSITY OF HONG KONG

THE LINGNAN INSTITUTE OF BUSINESS ADMINISTRATION

QUESTIONNAIRE

INSTRUCTIONS: PLEASE TRY TO ANSWER ALL QUESTIONS. FOR QUESTIONS THAT ARE INAPPLICABLE, PLEASE WRITE "NIL". SECTION B AND SECTION D MAY BE SKIPPED BY CERTAIN RESPONDENTS. PLEASE READ THE INSTRUCTION (IF ANY) FOR EACH SECTION BEFORE ANSWERING. SOME QUESTIONS MAY HAVE MORE THAN ONE ANSWER. THANK YOU.

TIME REQUIRED: 5 - 10 Minutes

PLEASE RETURN THIS QUESTIONNAIRE AS SOON AS POSSIBLE.

PERSONAL DATA OF RESPONDENT:

Sex: _____

Years of Practice _____

No. of years in the obsetetric/Paediatric unit _____

Post (Job Title): _____

SECTION A: General

1. Please check the categories which best describe the mothers who come to this hospital.

Social Class:

____Upper
____Middle
____Lower

Education:

____Primary
____Secondary
____College

Occupation:

____Professionals
____White collar
____Blue collar
____Housewife

2. How do you see your role with respect to infant formula (humanized milk powder)?

____Decision maker. I am the one who decides on which brand(s) to use for the hospital.
____Advisor to mothers. I give brand recommendations to mothers during consultation.
____Advisor to the hospital. I advise the hospital on what brand(s) to use.
____Others, such as _____.

3. Have you ever been approached by milk nurses/salespersons from the infant formula companies (agents)?

____Yes
____No

4. If yes to the above question, approximate number of visits (Per month)?

_____

5. What are some of the promotional materials which are given to you by the milk nurses?

____Free samples
____Mother & Baby Booklets
____Calendars
____Stationery Sets
____Appointment Books
____Pamphlets on product composition
____Leaflets with preparation instructions

____Others, such as _____

6. What are some infant formula companies that have approached you? Please indicate with a "✓" the 2 most frequent ones.

____Nestle
____MeadJohnson
____Bristol-Myers
____Wyeth Int'l
____Cow & Gate
____Abbott Laboratories
____Others, such as _____

7. If approached by a mother for a recommendation, which brand(s) of infant formula would you recommend?

____Nan
____S-26
____Others, such as _____
____Cow & Gate
____SMA
____Lactogen
____Similac
____Enfamil

8. What are your information sources as far as infant formula is concerned?

_____Promotional literature given by infant formula companies
_____Own research
_____Mail from infant formula companies
_____Word-of-mouth, from my colleagues
_____Medical Journals
_____Others, such as _____

9. Would you have more confidence in brands manufactured by pharmaceutical companies than those by food products companies? _____Yes _____No

10. Which of the following statements will best express your feeling on feeding methods?

___All mothers should breastfeed whenever possible
___Bottlefeeding with humanized formula is as good
___Bottlefed only when breastfeeding is restricted by mother's health
___Bottlefed only when breastfeeding is restricted by mother going to work
___It is up to the mothers to decide
___Bottlefed when special problems arise, such as _____
___Other comments: _____

SECTION B: This section applies to those who have direct contacts with mothers. Hospital administrators who do not see mothers at all may skip this section.

11. Under what circumstances is the feeding issue discussed?

____When mother comes in for consultation before childbirth
____When mother comes in for consultation after childbirth
____During mothercraft (Antenatal) classes
____When the baby is sick
____When the baby is brought to the nursery
____Others, such as _____

12. In the above cases, who usually initiates the discussion on feeding?
_____The mother
_____Myself

13. When you see the mothers, which feeding method do they prefer?
_____Breastfeeding _____Bottlefeeding

14. If the mothers prefer bottlefeeding, do they usually have a brand in mind? _____Yes _____No

15. What is your first reaction when mothers ask about baby feeding?

___Ask about preferred way of feeding
___Give mother a brand name immediately
___Say all brands are equally good
___Advocate breastfeeding
___Give brand name reluctantly
___Give mother a list of brand names to choose from
___Give the brand names used by the hospital
___Ask mother which brand of formula she would prefer
___Others, such as _____

16. The following is a list of factors. Please check and rank in order (e.g. 1 = most important) the factors that you have considered before recommending a particular brand to a mother

____Price
____Education level of mother
____Social class of mother
____Composition of the formula.
____Reputation of the manufacturing company
____My own past experience with the brand
____Health (response) of the baby when given the formula
____The hospital's policy regarding infant formula usage
____The brand(s) used by the hospital
____The brand that the baby has been fed on when in hospital
____Availability of brand in market (easy to buy)
____Continuous supply of brand to hospital
____Convenience in preparation
____Fairness to all infant formula companies
____Others, such as _____

SECTION C: This section refers to the hospital's usage of infant formula.

17. The infant formula used in this hospital are:

_____Supplied by infant formula companies and the companies are:
_____

_____Bought by the hospital and the brands are: _____
_____

18. What is the hospital's policy (if any) with respect to feeding practices?

_____The hospital actively advocates breastfeeding
_____The hospital recognizes that breastfeeding is best but very much leaves the mothers alone in their choice
_____The hospital does not have a stated preference on feeding methods
_____Others, such as _____

19. Who has the ultimate authority in deciding which brand(s) of infant formula to use for the hospital?

_____Administrator _____Paediatrician _____Head Nurse
_____Others, such as _____

20. Are the brands used by the hospital the result of a group decision?

_____Yes, and the group consists of ___(no.) Obstetrician
___(no.) Paediatrician
___(no.) Head Nurse
_____ Administrator
___Others, such as _____

21. In the decision making process, which of the following factors are considered? Please check and rank (e.g. 1 = most important).

____Price
____Education level of mother
____Social class of mother
____Composition of the formula
____Reputation of the manufacturer
____My own past experience with the brand
____Health (response) of babies when given the formula
____The hospital's policy regarding infant formula usage
____The brand(s) used by the hospital
____Availability of brand in market (easy to buy)
____Continuous supply of brand to hospital
____Convenience for the milk kitchen
____Fairness to all infant formula companies
____Others, such as _____

22. How many beds are there in the hospital's:

Materniaty ward? _____
Paediatric Unit? _____
Nursery? _____

SECTION D: Please answer this section if you have children.

23. Are your children breastfed or bottlefed?

____They were all breastfed
____They were all bottlefed
____ (no.) of my children were breastfed and ____ (no.) of them were bottlefed

24. If your children were bottlefed, which brand(s) of infant formula did you use? _____

25. Why did you choose the brand(s)?

____Larger discount
____Recommendation by doctors/nurses
____Confidence in the brand due to past experience
____Other reasons, such as _____

-END OF QUESTIONNAIRE-

THANK YOU VERY MUCH

APPENDIX 3 : LIST OF HOSPITALS WHICH PARTICIPATE IN THE STUDY

Alice Ho Miu Ling Nethersole Hospital

The Adventist Hospital

Canossa Hospital

Central Hospital

Evangel Medical Hospital

Kwong Wah Hospital

Matilda & War Memorial Hospital

Our Lady of Maryknoll Hospital

Tsan Yuk Hospital

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醫務人員及醫院在推荐／選用奶粉時之決策程序

近數年來，以奶粉（母乳代替母乳餵哺嬰兒）已成為一普遍現象。促成這現象的其中一個原因，為奶粉製造商及代理商對其產品的努力推廣及宣傳。一般的宣傳內容，多以奶粉為母親帶來的方便，產品的成份接近母乳等為中心，甚至令許多母親誤以為奶粉與母乳的成份完全一樣，因而採用奶粉來代替母乳餵哺嬰兒。

究竟母乳化奶粉是否能取替母乳呢？一般營養學家及醫生都認為沒有一種奶粉的成份能百份之一百與母乳相同

。故此，奶粉是沒法取代母乳的。採用奶粉來餵哺嬰兒，當然有它方便之處，但若在不合手術生條件的情況下使用，可能對嬰兒的健康反為有害。

有見及此，關心兒童健康的人士遂掀起一個反推廣及宣傳奶粉的運動，旨在希望各地政府及有關當局正視這問題而作出反應，例如頒佈禁令或條例，禁止奶粉商使用廣播媒介作為宣傳其產品的途徑等，繼而呼籲母親們恢復用母乳來餵哺嬰兒。

於是，奶粉商現正面對一個問題，就是如何去繼續推廣及宣傳其產品而又同時向社會負責。

另一方面，各奶粉商對此反宣傳也紛紛進行回應。於去年（一九七九年）十月的一個國際性會議上，各大奶粉商達成一個自律的協議，就是停止使用大眾廣播媒介作為宣傳的途徑，同時又將宣傳的對象，從母親們轉移至醫務人員。但是，在採取以上的措施後，奶粉商是否能逃過輿論呢？醫務人員及醫院在其推荐／選用奶粉之決策程序上，會否與母親們一樣，容易受奶粉商的宣傳影响呢？

本研究透過對醫務人員及醫院在推荐／選用奶粉時之決策程序的認識，來評定奶粉商所作的宣傳是否對醫務人員及醫院有所影响，然後根據研究所得，對奶粉商未來的

產品推廣及宣傳計劃作出建議。

資料搜集方面，本研究者先探討奶粉商現時所使用的推廣及宣傳方法，以作為背景，然後用資料處理程序的理論(Information Processing Theory)作為基本。其後，分別接觸於九間醫院的十六位醫務人員均被訪問，其中包括三位院長，六位醫生，及七位護士等。事後他們每人都獲到一份問卷。問卷內容與訪問的內容相似但較簡單，旨在測驗訪問所得資料的準確性。最後，每位醫務人員及每間醫院在推荐/選用奶粉時之決策程序，都由一流程圖(flow diagram)代表。

研究結果，發現醫務人員的推荐奶粉程序，實為一簡

單的過程。醫務人員或勸母親們採用嬰兒出生時在醫院所吃的牌子，或從其認可牌子的名單中選一、二，予以推荐，或讓母親們自己選擇，或根據個別情形而推荐，甚至或者完全拒絕推荐任何牌子。普遍來說，此推荐過程往往趨於母親們的要求。

由於各牌子的奶粉都有類似的成份，一般醫務人員除兒科醫生外都認為所有母乳化奶粉都大致相同，而只有以其他特点(例如售價)來分辨它們。由於兒科醫生們對奶粉有較深認識，他們較難受奶粉商的宣傳影响。反之，由於一般醫務人員所得有關奶粉的消息都是從宣傳稿件而來，他

們比較容易受奶粉商的宣傳影响。

醫院方面，它們選用奶粉時之決策程序，完全受其對使用奶粉的政策採納。現有的奶粉使用政策，有(一)循環式，例如選用六種牌子，每種牌子使用兩月；(二)讓母親們自己選擇；(三)只用某一牌子的奶粉及(四)同時使用五、六種牌子等。一般而言，較大的醫院為方便起見，多只採用一種牌子的奶粉。另一方面，由於私立醫院收費較貴及規模較小，許多時候它們都容許母親們自己去選擇奶粉的牌子。

至於醫院在決策程序中考慮到的因素，有(一)奶粉的成份；(二)製造商有控制產品品質方面的聲譽；(三)奶粉是否容

易購買得到及(四)以往的使用經驗。價錢方面，未必所有的醫院都考慮到這因素。決策者方面，醫院或由一人院長或兒科主任來決定選用何種牌子奶粉，或由一小組(由院長，兒科及產科醫生，護士等組成)來決定。

本研究所得的結論是：推廣及宣傳奶粉的功夫對醫務人員在推薦/選用奶粉時之決策程序有一定的影响。

基於研究所得，本文對奶粉商作出以下的建議：奶粉商應着力於成為一個對社會負責的團体。

要成為一個對社會負責的團体，奶粉商可以：(一)主動

提倡恢復以母乳餵哺嬰兒，積極地成為此運動的贊助者，

同時防止母親們濫用母乳餵哺嬰兒之方面的知識外，更可提供有關兒童健康及營養的知識。(二)編訂與嬰孩有關於推廣母乳餵哺的自律準則。(三)改變其產品的形象，從一種能代替母乳的產品改為一種只在母親產假後而不能親哺時才適宜用的產品。(四)致力於產品研究，務求提高其產品的質素，同時考慮供產高含白質的奶粉，以適滿六個月之嬰兒的需要。

最後，由於預料各地政府將要會見對奶粉的推廣及宣傳施以限制，必須商應及早作出準備及反應，以表現它們是對社會負責的一樣。在這過渡時期，一個能關心大眾健康

面對社會負責的心物商，可能因受到大眾贊許而對此機會脫穎而出，甚至奠定其日後成功發展基礎的地位。